

WATERLOO UNCOVERED

PROJECT REVIEW — VOLUME 1



THE GROUNDBREAKING CHARITY THAT COMBINES
WORLD-CLASS ARCHAEOLOGY WITH
VETERAN CARE AND RECOVERY





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ACKNOWLEDGEMENTS



By Mark Evans, CEO.

As Waterloo Uncovered moves into our fourth year, we are very proud to present our Project Review, Volume 1 – the first in a series of publications that will cover the work done by WU.

This document has taken a great deal of time and effort to produce, and would not have been possible without the hard work and invaluable contributions of the staggeringly large number of people who support Waterloo Uncovered. Many have full time jobs, some are not in the best of health, and others have to travel miles to be involved; but everyone seems to find the time and energy to help make WU a charity we can all be very proud off.

Because of the sheer number of people involved, please forgive me if you are not mentioned by name in the acknowledgements, but please understand that we are incredibly grateful to you all, for everything you have done. We value your time and effort so much, and nothing in this review (or the project at large) would have been possible without each and every one of you.

I would like to take the opportunity to thank the authors for their contributions, and our excellent editors Florence Laino and Alex Cauvi who have tirelessly and lovingly collated (and chased) your work. Also, thank you to Mike Greenwood and Francesca Benetti, for your keen eyes and experience, that provided the finishing touches to this team effort.

The charity simply could not exist without support from our five partner organisations and their lead representatives: Tony Pollard at University of Glasgow, Dominique Bosquet from the Service Public de Wallonie, Stuart Eve at L – P : Archaeology, Marc Van Meirvenne and Phillipe de Smedt from Ghent University, and Vicki Haverkate with University College Roosevelt. Working with them over the last four years have been a team of supervisors, archaeologists, welfare staff, metal detectorists, filmmakers, photographers, artists, minibus drivers, tea-makers, students, many other volunteers, and our trustees. Everyone has worked so hard to get us here. Thank you all! You are the people that make WU happen every year. You should find your name in the last pages and if you don't, please get in touch and we will amend it (and apologise profusely!)

Special mentions go to Colonel Simon Vandeleur, who as Regimental Adjutant has helped make the Coldstream Guards such vital and valuable partners, and Nathalie Du Parc, for her role with the Intercommunale 1815 – who give us permission to excavate on their land at Waterloo. Other organisations that have played a vital part include Project Hougoumont and Waterloo 200, as well as the Coldstream Guards, ABF The Soldiers' Charity, the Lt Dougie Dalzell MC Memorial Trust and The Rifles Care For Casualties who have supported and funded us from day one.

A large number of donors, both individuals and organisations, have given their support to Waterloo Uncovered; but the two I would like to thank in particular are John Chatfeild-Roberts and Robert Brooks. In 2015, John heard me speak at the Cavalry and Guards Club about a dream I had of excavating the Waterloo Battlefield and support serving personnel and veterans in the process. He saw the potential and helped fund our first ever excavation. Six months later, Robert was kind enough to lend his support and the fantastic hospitality of Bonhams for the celebration of our first year's work – a fundraiser that allowed WU to build momentum and carry on past the 2015 bicentenary. The rest is history.

This report truly represents the vision, hard work and achievements of a lot of people from across Europe. Thank you all, and I hope you enjoy the read.



AN INTRODUCTION TO THE REVIEW



By Nathalie du Parc, Présidente de l'Intercommunale, Waterloo 1815.

In early 2015, as we raced against time to open the restored Hougomont to visitors on the 200th anniversary of the battle, ideas to dig yet more holes in our already cluttered building site were not high on the agenda. Nonetheless, the proposal we were given by Waterloo Uncovered was something different, and with a little faith and imagination we could foresee a very special cooperation. I am delighted that we trusted our instincts then: together we have seen Waterloo Uncovered grow into a fascinating and rewarding collaboration of enthusiasts, academics, students and veterans from around Europe. The continued archaeology demonstrates the importance of Hougomont as a living site, and of the close bonds of respect and friendship that continue to exist between European nations as they did 200 years ago. I am delighted to introduce this review, and to thank all those who have contributed to it. We look forward to the next chapter!

A WORD FROM THE CHAIRMAN



Brigadier Greville Bibby, CBE

Like most worthwhile endeavours, Waterloo Uncovered had small beginnings. In the British Army, we compare a regiment to a family, and I was first invited to become involved by Mark Evans and Charlie Foinette, officers with whom I had served in the Coldstream Guards. Since those small beginnings we have grown, and the Waterloo Uncovered family has welcomed new members from across Europe and from all walks of life – civilians, military, academics, professional archaeologists, students, volunteer helpers and members of the public. The list is long and distinguished, and I cannot possibly do proper justice to all those who have combined to make this idea a reality. In a project inspired by historic and modern conflict, cooperation and friendships that cross international borders and transcended politics are especially poignant, but they shouldn't come as a surprise to those of us with experience of multinational military operations. The truth is, we have a lengthy and shared history of alliance with our closest continental neighbours, and it should be no surprise that our military participants instinctively find common ground. What is more gratifying to me is the realisation that such instinctive camaraderie extends so easily to everyone involved in this project, and that people with such different backgrounds and experiences can be united by a shared interest – even one they didn't realise they had until they came to Waterloo!

This review is about two things: archaeology and fellowship. The two are irreversibly intertwined, and both rely on the selfless commitment and generosity – often very considerable – of any number of individuals and organisations. From the British Government who have supported us with a grant from the LIBOR fund, to the Belgian Government's continued archaeological support and encouragement, with charities and organisations large and small that include ABF The Soldiers' Charity, The Royal British Legion, Help for Heroes, the Coldstream Guards and a huge number besides, to private donors who have given unstintingly of time and money, thank you. Your support has been essential so far, and will continue to be as the Waterloo Uncovered journey continues. This review explains what your support has made possible so far, and I hope you enjoy it. There is much more to do!

FOREWORD



By Tony Pollard, Professor of Conflict History and Archaeology at the University of Glasgow and Director of the Centre for Battlefield Archaeology–Waterloo Uncovered Archaeological Director.

This review represents the collective effort of an international team of highly motivated and enthusiastic people, engaged in the most rewarding archaeological project I have ever been part of. As is obvious in the sections that follow, an impressive cohort of leading specialists in a variety of fields have devoted a lot of time and effort to making Waterloo Uncovered a ground-breaking development in the fields of both conflict archaeology and veteran engagement. Working with military veterans to provide them with a range of real benefits from their involvement in battlefield archaeology; Waterloo Uncovered builds on the pioneering work done by Operation Nightingale. Waterloo Uncovered, moreover, is thus far the only such initiative to be built around a long-term archaeology project, and the first to be initiated by veterans. It is also the first researched, multi-disciplinary archaeological project to focus on the iconic battlefield of Waterloo.

My own involvement began in Autumn 2014, when I was invited to a meeting at the home of the Guards regiments, Wellington Barracks, by Mark Evans and Charlie Foinette, both of whom I am now proud to call colleagues and friends. The pair had studied archaeology together at University College London and then gone on to be officers in the Coldstream Guards. They had an ambition to set up a battlefield archaeology project at Waterloo and the bicentenary year of 2015 seemed an ideal time to put such an ambitious scheme in motion.

When asked if I would like to take on the task of directing such a project there could only be one answer - of course! For one thing, my interest in the archaeology of Waterloo went back as far as 2011, when I drew up a proposal to carry out a survey – alas though, as with many potential projects, nothing came of this. What Mark and Charlie had in mind though was something quite different – a project that, among other things, engaged with veterans. This fitted perfectly with my own interests, as I was at the time beginning to work with veterans from the Falklands War. The project also had additional appeals, such as international partners with very impressive track records in field archaeology and access to state of the art technology (notably, L - P : Archaeology and the geophysics team from the Ghent University).

And so it was that in 2015, Waterloo Uncovered (I have always liked Charlie's suggestion that we call ourselves "Waterloo Underground"), took its first steps. We began by field testing some of the many anomalies identified in the first phase of our geophysical survey and initiating an extensive programme of metal detecting. We took along with us what now seems a modest number of veterans, archaeologists, historians and students. To our relief, that first trip was a great success, on both the archaeological and engagement fronts, and it was clear that a long-term project was viable. Accordingly, a programme of fund raising was put in place and the team began to grow. Initially, I co-directed the project in the field with Dominique Bosquet, an incredible archaeologist from SPW, the Wallonian state heritage body but, as the project has expanded, Stuart Eve from L - P : Archaeology has joined the directing team.

Thus far, we have largely focussed our work on Hougoumont Farm, partly due to the historical importance of the place to the Coldstream Guards, but also because of the co-operation of Project Hougoumont, which has been so important in getting the project rolling. As we had hoped, the site has provided some exciting archaeology, resulting from the deployment of a variety of techniques, including metal detecting and traditional excavation. It is our aspiration over coming years to expand our work across the wider battlefield, and indeed we have already begun to do so, but there is still much to be done at Hougoumont, and this review presents an overview of the results from our labours there in 2015 and 2016. It is a great pleasure to see this information going out into the public domain where, alongside other open access resources such as the online artefact database, it will give the widest possible audience an insight into how this unique project is not only advancing our understanding of the epic events of 1815, but also, and very importantly, how it is helping people.



**HOUGOUMONT CHATEAU IN BELGIUM WAS SCENE OF SOME OF THE FIERCEST
FIGHTING IN ONE OF THE MOST DECISIVE BATTLES IN HISTORY —WATERLOO.**

**TODAY, WE'RE CASTING NEW LIGHT ON WHAT ACTUALLY HAPPENED THERE,
THROUGH A PROJECT THAT BRINGS TOGETHER PROFESSIONAL ARCHAEOLOGISTS,
SERVING SOLDIERS AND VETERANS —WATERLOO UNCOVERED.**

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WATERLOO UNCOVERED: THE START OF A UNIQUE PROJECT

2015 marked the bicentenary year of the Battle of Waterloo. Unsurprisingly, people across the world were keen to commemorate an event in which tens of thousands of people lost their lives and which shaped modern Europe.

Whilst the majority of bicentenary commemoration plans were concerned with matters 'above ground' here was an opportunity to look *under* it at the archaeology. Waterloo may have been one of the most well-documented battles in history, but very little archaeology had been carried out across the battlefield. The anniversary was an excellent opportunity to capitalise on public interest and bring together a team of archaeological experts and new archaeological techniques that would, we hoped, allow us to add valuable information to what was already known about the battle. Maybe even challenge some of the existing ideas!

The truth is we were not sure how much archaeology we would find: 200 years of natural wear and tear, modern agricultural practices, and the well-documented looting of artefacts from across the battlefield (most recently by illegal metal detecting activity) have all taken their toll. But unperturbed, and knowing this might be the last chance to rescue any archaeology that was there, we set off in April 2015 with a small team of around 30 (mostly from the UK but also Belgians and French, and comprising not only archaeologists, but also serving military personnel and veterans).

The focus for this first excavation would be Hougoumont Farm, site of the chateau that played a vital part in Wellington's victory. This place was of personal interest to project founders Mark Evans and Charlie Foinette, both of whom served in the Coldstream Guards, a regiment that played a key role in the defence of the chateau in 1815. Prior to their military careers, Mark and Charlie had studied archaeology together at University College London. Their belief in the potential of archaeology to benefit people who had served in the military, was key to the development of the project.

To everyone's delight we found two things: firstly, enough archaeology to add significant value to the story of the battle,

and secondly, a sense of goodwill, success and cooperation that immediately told us this project was worthwhile and should continue.

That trip led to Waterloo Uncovered establishing itself as a registered UK charity with five founding partner organisations:

- > **SPW (Service Public de Wallonie)**, whose archaeology department, under the direction of Dominique Bosquet, provide vital archaeological and local expertise.
- > **The Centre for Battlefield Archaeology, University of Glasgow**, led by Professor Tony Pollard, who provide specialist staff and skills in Conflict Archaeology.
- > **L - P : Archaeology**, whose colleagues, led by Partner Dr Stuart Eve, provide professional archaeology support across the project.
- > **ORBit team, Department of Soil Management, Ghent University**, led by Marc Van Meirvenne, are world leaders in geophysics and undertake all the project's geophysical survey and interpretation.
- > **University College Roosevelt, Utrecht University**, who provide students for the project, under the direction of Vicki Haverkate.

PROJECT'S KEY AIMS

The charity itself is steered by a board of trustees and driven by CEO and co-founder Mark Evans, who manages the day-to-day administration, logistics, fundraising and veteran support program, and is responsible for delivering the four project aims:

- > **Professional archaeology** is essential to being allowed access to the battlefield, securing the involvement of the partner organisations and producing results. The aspiration to make full use of a range of technologies and techniques, coupled with the multi-disciplinary nature of archaeology itself (from pre-excavation desktop research right through to post-excavation analysis, archiving and public engagement) is fundamental to ensuring that the project delivers its full potential and meets all of its aims.
- > **Public engagement** makes a project truly worthwhile and relevant. At the heart of the Waterloo Uncovered is the aim of understanding war and its impact on people; therefore we're committed to making our work available and accessible to a wider public. To that end publication, education, outreach, and a strong digital and media presence are key parts of the project.
- > **Veteran support** is an integral part of the project, born of the founders' personal experiences and a project-wide desire to use archaeology to its full potential to help people. In addition, there is a special significance in people of a military



During the first 2015 excavation, Coldstream Guard serving personnel and veterans pose with local builders in front of the North Gate of Hougoumont.

background conducting battlefield archaeology; their first-hand knowledge of battles, strategy, military life and history creates a unique bond across time with those who fought and fell.

> Multinational collaboration has been essential to Waterloo Uncovered. It's enabled us to put together the best team; produce the fullest interpretation of the archaeology and understanding of the battle; reach the widest audience; and support as many serving personnel and veterans as possible.

A BRIGHT FUTURE

Waterloo Uncovered is a growing success. In 2015/16 we completed four archaeological excavations at the Waterloo battlefield, uncovering new and exciting information about the battle and helping over 70 serving personnel and veterans in the process. This review is an important part of the process, allowing

us to tell you what we have achieved and what we plan for the future. Waterloo Uncovered has a programme of activity secured for the next five years. We hope, by securing the right funding and through developing new partnerships, that we can extend our work beyond this to unlock further secrets of this unique and compelling battlefield.

Waterloo Uncovered is changing our understanding of the history of the battle and, at the same time, transforming the lives of many people involved in the project. It is a model for archaeology and social change that will continue to develop and could be used elsewhere. It has a very bright future that would not have been possible without the hard work and support of all those people and organisations who have taken part. In particular I would like to give a special mention to the Coldstream Guard Trustees and Regimental Headquarters, The Army Benevolent Fund, The Cavalry and Guards Club, John Chaterfield-Roberts and Nathalie Du Parc. Without their belief and early participation none of this would have been possible. ■

2015-2016 EXCAVATION DATES AND TEAM MAKEUP:

Dates	Description	Team Total	Team Background				Team Nationalities				
			Staff/Support	Archaeologists/ Academics Detectivists	Military/ ex-military	Student	UK	Belgian	Dutch	French	Other
April 2015	One-week preliminary excavation to assess the potential for future archaeology at Hougoumont Farm.	29	7 (4 communications, 2 management/welfare, 1 volunteer support)	16	10	1	23	3	0	1	2 (2 SA)
May 2015	Mini excavation to produce BBC film for inclusion in the Queen's Birthday Parade (Trooping the Colour) Celebration. Staying true to the project aims, a small team was selected and trench dug and recorded, finding a number of artefacts including a very interesting saw.	6	1	2	4	0	4	1	0	0	1 (SA)
July 2015	Two-week summer excavation building on the experience and results of April. This was the first 'full scale' operation and a significant and successful undertaking for the project and team.	57	13 (5 communications, 2 management/welfare, 1 welfare, 3 volunteer support, 1 veteran carer, 1 finds photographer)	22	23	6	43	6	5	0	3 (2 SA, 1 USA)
July 2016	Two-week summer excavation building on the experience and results of 2015.	61	7 (2 communications, 2 management/welfare, 1 welfare, 1 volunteer support, 1 finds photographer)	25	21	14	44	8	5	1	4 (1 USA, 1 SA, 1 Ger, 1 Dane)

N.B. A number of the staff/support and archaeologists on each trip are the same people (e.g. the Archaeology Directors Prof. Tony Pollard and Dominique Bosquet). The vast majority of veterans and serving personnel have only attended one trip. See (Evans, page 25) for further information.



About the author:

Mark Evans studied archaeology at UCL before joining the Army in 2004. His subsequent career fostered a keen interest in the welfare and recovery of injured service personnel, whilst service in the Army's oldest regiment continued to inspire his love of history. Mark retired from the army in 2010 when he was diagnosed with PTSD. After his subsequent treatment and recovery, Mark founded Waterloo Uncovered together with Charlie Foinette in 2015 and is now the charity's CEO.

THE BATTLE OF WATERLOO

New to the Battle of Waterloo? Our whistle-stop history, by Charles Foinette and Florence Laino, is here to help...



'The Battle of Waterloo' by William Sadler (1782 – 1839).

Waterloo can, with some justification, lay claim to being the single most significant day's fight in European history. Other battles were longer, fought over larger areas, or by more combatants, but none can be said to have settled a war in a single afternoon, and to have produced, in their conclusion, the peace that characterised the continent for so long after 1815.

Striking too, about Waterloo, is the triumph of the 7th Coalition. Wellington's was not a *British* army. Even leaving aside the decisive Prussian intervention, 'the Peer' led a force that included men from Hanover, Nassau, the Netherlands and Brunswick. Even his 'British' army included the King's German Legion. This was the very essence of the force opposing Napoleon – Europe, together, acting against the man who threatened once more to drag his neighbours into war. For France too, it was decisive, ending finally the reign of Napoleon, and establishing a chain events that would, fifteen years later, lead to the fall of the Bourbon monarchy and, ironically, Belgian secession from the Netherlands.

The battle formed the apex of 20 years of war in Europe, the roots of which were born in the years following the French Revolution. France, having rid itself of the despotism of the 'Ancien Regime' took up arms to fight for its liberty against outside (and inside) forces that strove to crush the new regime, and the danger it might pose to their own positions.

THE RISE OF NAPOLEON BONAPARTE

Amid the turmoil of revolution, a young Corsican artilleryman rose dramatically through the ranks. Napoleon, passionate and ambitious, found himself at the head of a fervent, nationalistic army who fought with zeal to preserve their liberties. From the siege of Toulon in 1793, to his last victory at Ligny in June 1815, Napoleon expanded French territorial control and brought his

people triumphs (and some significant disasters) from Egypt to Russia. Following early success in the Italian campaign, and amidst an unsteady Directory on the verge of Royalist defections, Napoleon staged a military coup in 1799, proclaiming himself as the First Consul and Emperor of Rome. In 1804, Pope Pius VII was dragged from Rome to preside over a ceremony in which Napoleon crowned himself with the imperial crown.

During the years of war, Napoleon pursued an aggressive foreign policy that reshaped France and revised the map of Europe. Territory that fell under French control stretched from the Mediterranean to the Baltic, and in 1805 Napoleon defeated the



'The Plum-pudding in danger' (1805) by James Gillray. This satirical piece sets the British Prime Minister, William Pitt, opposite Napoleon, tearing away at the globe in a bid to gain a larger portion.

Image source: The British Library

Third Coalition (led by Austria and Russia) at Austerlitz, effectively toppling the 2,000 year-old Holy Roman Empire.

In 1806, following naval defeat at Trafalgar, Napoleon imposed the 'Continental System' across all French satellite states and occupied zones, an economic blockade of all trade to and from Britain. This had limited success, and following reverses in the Iberian Peninsula, the final straw came following the catastrophic failure in Russia in 1812. Sensing French vulnerability, former enemies returned to the fray, forming the 6th coalition for campaigns that eventually resulted in the 1814 exile of Napoleon to the Island of Elba and the restoration of the Bourbon monarchy. Peace, though, was to last only a year.

THE 7TH COALITION AND THE RACE TO MEET NAPOLEON

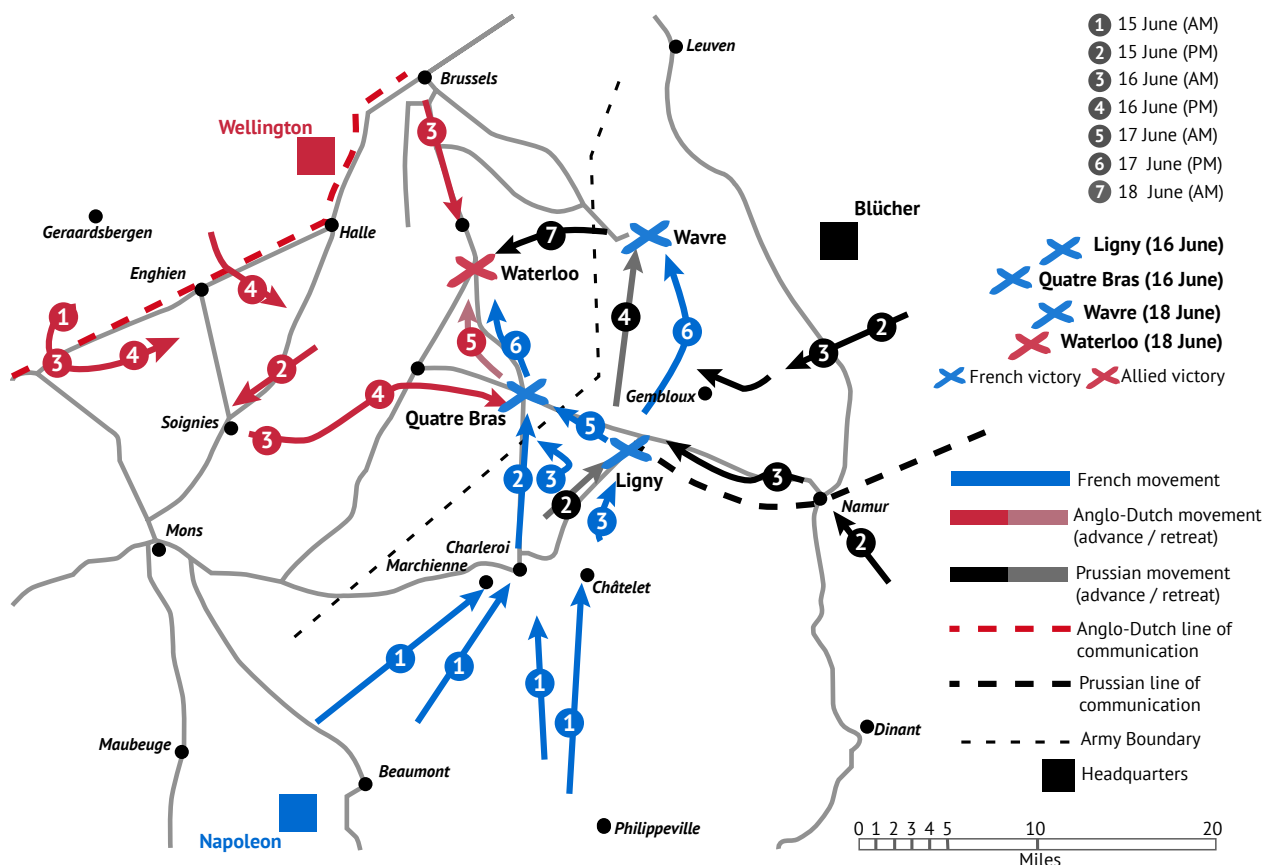
King Louis XVIII proved an unsatisfactory leader. Bitter, petty and unintelligent, his attempts to revoke the rights and privileges brought by the Revolution soon soured his relationship with both the people and his own government. When Napoleon escaped from Elba and returned to France to take his throne at the beginning of the 'hundred days', a cautious welcome turned rapidly to a triumphant homecoming, and he swept into Paris on a wave of popular celebration as the King fled to exile again.

Once more the clouds gathered. Ranged against Napoleon was an impressive '7th Coalition', comprising Britain, Russia, Prussia, Sweden, Austria, the Netherlands and most of the German states. Napoleon gathered his veterans and, augmented by the latest call to arms—the *levée en masse*, determined to strike at his enemies before they could concentrate against him.

The blow was to be struck northwards. In Brussels, Wellington and his 73,000-strong combined army had gathered, whilst Blücher and his 84,000 Prussians were further East. Napoleon, with 107,500 men, planned to out-march his opponents, and to defeat each of them in detail before they could combine. This, he calculated, would give him the leverage required to sue for a lasting peace on terms favourable to France. On 15th June, he crossed the border with modern-day Belgium.

That night, Wellington received news that Napoleon had captured Charleroi (32 km south of Waterloo), forcing an advance guard of Prussians north to Ligny. Wellington, who was attending the Duchess of Richmond's Ball in Brussels at the time was said to have stated "*Napoleon has humbugged me, by God; he has gained 24 hours' march on me.*" He pointed to a crossroads called Quatre Bras, and then to Waterloo, "*we shall not stop him there, and if so, I must fight him here.*"

On 16th June, Napoleon split his troops on two fronts to fight the Battle of Ligny (against the Prussian forces to push them into a further retreat), and the Battle of Quatre Bras (against the British allied advance troops). At Ligny, the French scored a significant victory, and pursued the Prussians north towards Wavre. At Quatre Bras, the fighting was inconclusive, Dutch troops fought a desperate holding action, gradually reinforced by Wellington's British troops as they arrived by forced march from Brussels. By nightfall, the French advance had stalled, but the Allies found themselves in a position that would clearly become untenable once victorious French units arrived from Ligny. The next day, in rapidly deteriorating weather, and with the French in no hurry to press their advantage, Wellington withdrew in good order to the



Troop movements for French, Anglo-Dutch and Prussian troops in the days leading up to the Battle of Waterloo.

ridge of Mont St Jean, a site reconnoitred months before, ideally-placed for defence. In rain so torrential that it was described by some sources as 'the worst in living memory', his exhausted men turned, and waited.

With Marshal Grouchy, and his force of some 30,000 in pursuit of the Prussians, Napoleon finally moved to follow Wellington. Nightfall of June 17th found the two armies once more in contact, and the French passed an equally miserable night in the open, perhaps somewhat improved by the prospect of victory in the morning.

PLAY-BY-PLAY: THE BATTLE

There is no doubt that Napoleon had underestimated the Prussian dedication to the war effort – within hours of their defeat at Ligny, Blücher had contacted Wellington, pledging 50,000 troops to reinforce the allies at Mont Saint Jean.

Wellington was well aware of Napoleon's tactics; his penchant for artillery, for fighting in column formation, and his vast superiority in cavalry. With this information, Wellington organised his troops. He had chosen his position well, the crest of a long ridge (about 2km wide) at Mont Saint Jean that barred the road to Brussels, Napoleon's final objective. He placed his troops hidden behind the ridge so as to be out of view of the artillery; the heaviest of his troops gathered around the centre and west, keeping faith that the Prussians would reinforce the east later in the day.

In addition to this, Wellington had control of three farmhouses ahead of his line, that of Hougomont (west), La Haye Sainte (centre), and Papelotte (east). These farmhouses were to act as key outposts attacking the flanks of the French as they advanced towards the allied line, in their favoured column formation. Lieutenant-Colonel James Macdonell was instructed to hold Hougomont at all costs, with 200 men of his Coldstream Guards, and 1,000 men from Nassau.

On the 18th June, with the ground finally dry enough to advance, Napoleon attacked at around 11:00. His strategy had been a simple one, hammer the line with artillery and break an opening to allow a massed infantry attack. The wood in front of Hougomont was one of his first targets – a tactical necessity for the French to avoid being flanked as they attacked the line.

The stratagem however, was not to pay off. Well hidden from bombardment by a large woodland, the 'chateau' (a grand walled farm) of Hougomont presented an obstacle to troops under Prince Jerome (Napoleon's brother), who, having been instructed to clear and hold the wood, probably failed to anticipate the danger the farm would present. Whilst they made repeated and valiant efforts to gain the farm, the lack of heavy artillery support made their task considerably harder, and against a disciplined and tenacious defence, each attack broke. After ten hours of fighting, as many as 5,000 French casualties lay nearby, whilst the British and Nassauers defending the chateau lost fewer than a thousand. The entire affair drew in up to a quarter of the troops that should have been available to aid Napoleon's main thrust against the Allied line, many of whom were 'penny-packeted' and spent in futile attempts to cross open ground and scale defended walls.

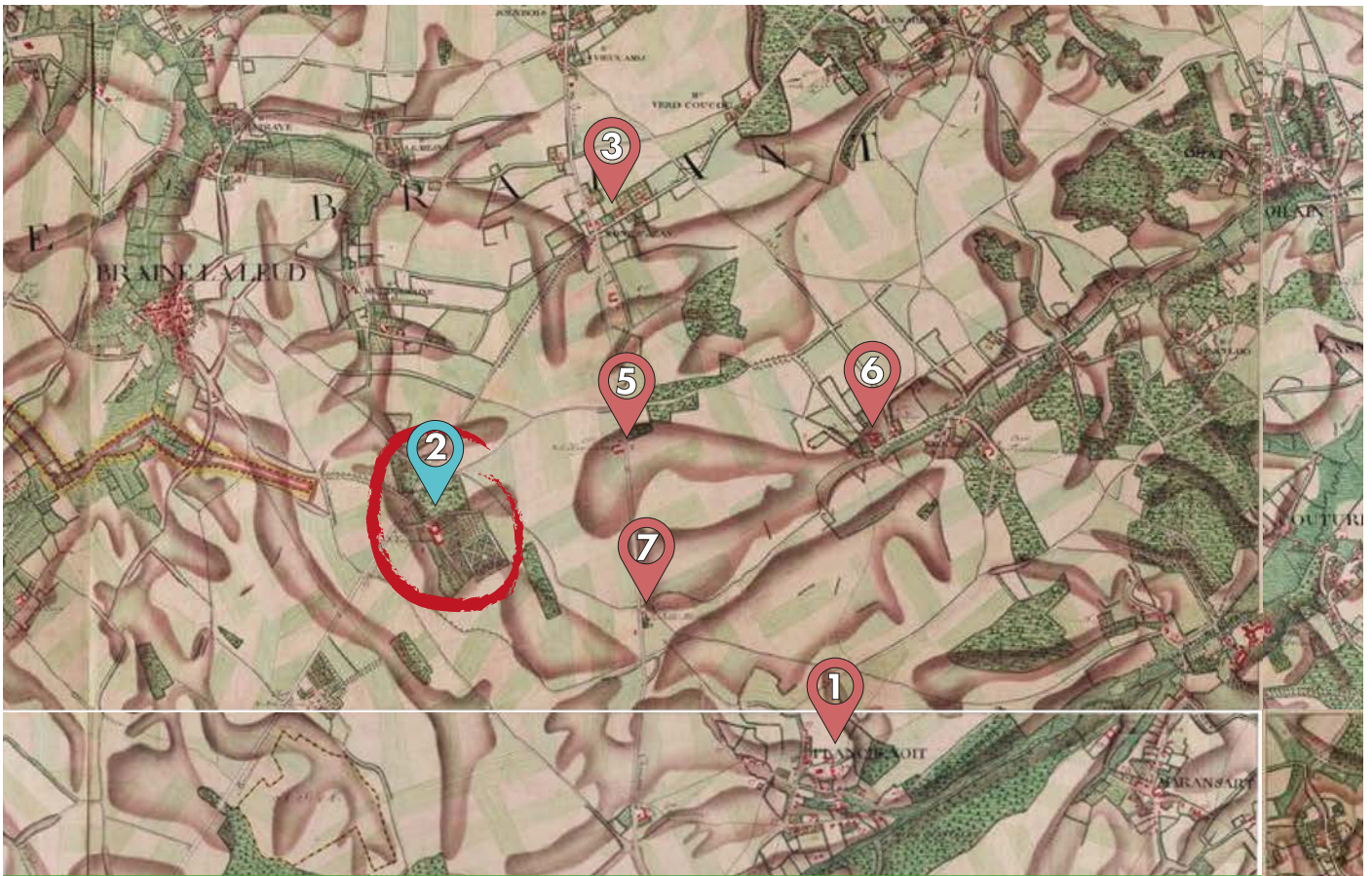
Whether it was intended as a diversion to draw Wellington's reserve, or merely an attempt by Napoleon to secure his own flank, the French attack on Hougomont was not the 'main event'. But worse was to come in the centre. With guns drawn up in a 'Grande Batterie' on the ridge opposite the allied lines, his artillery preparation commenced at about 11:30am, and continued for

nearly 2 hours. At around 1pm, the blow fell, with Comte d'Erlon's Corps driving hard against the already-depleted brigades to the left of Wellington's centre. As a crisis developed, the British cavalry launched a perfectly-timed charge, crashing into the flank of the French infantry and causing bloody chaos. But as the French fell back in disarray, the British cavalry, carried away with success, harried them back to their lines and fell in amongst the French guns. It was a futile effort; whilst gunners fell to their sabres, they had neither spikes to disable the guns nor the means to drag them off, and, more importantly, their blown horses were no match for the fresh mounts of the French. Just as, minutes before, the British cavalry had carved their way into d'Erlon's Corps, now they were on the receiving end of French sabres and lances. The Household and Union Brigades suffered terrible losses.

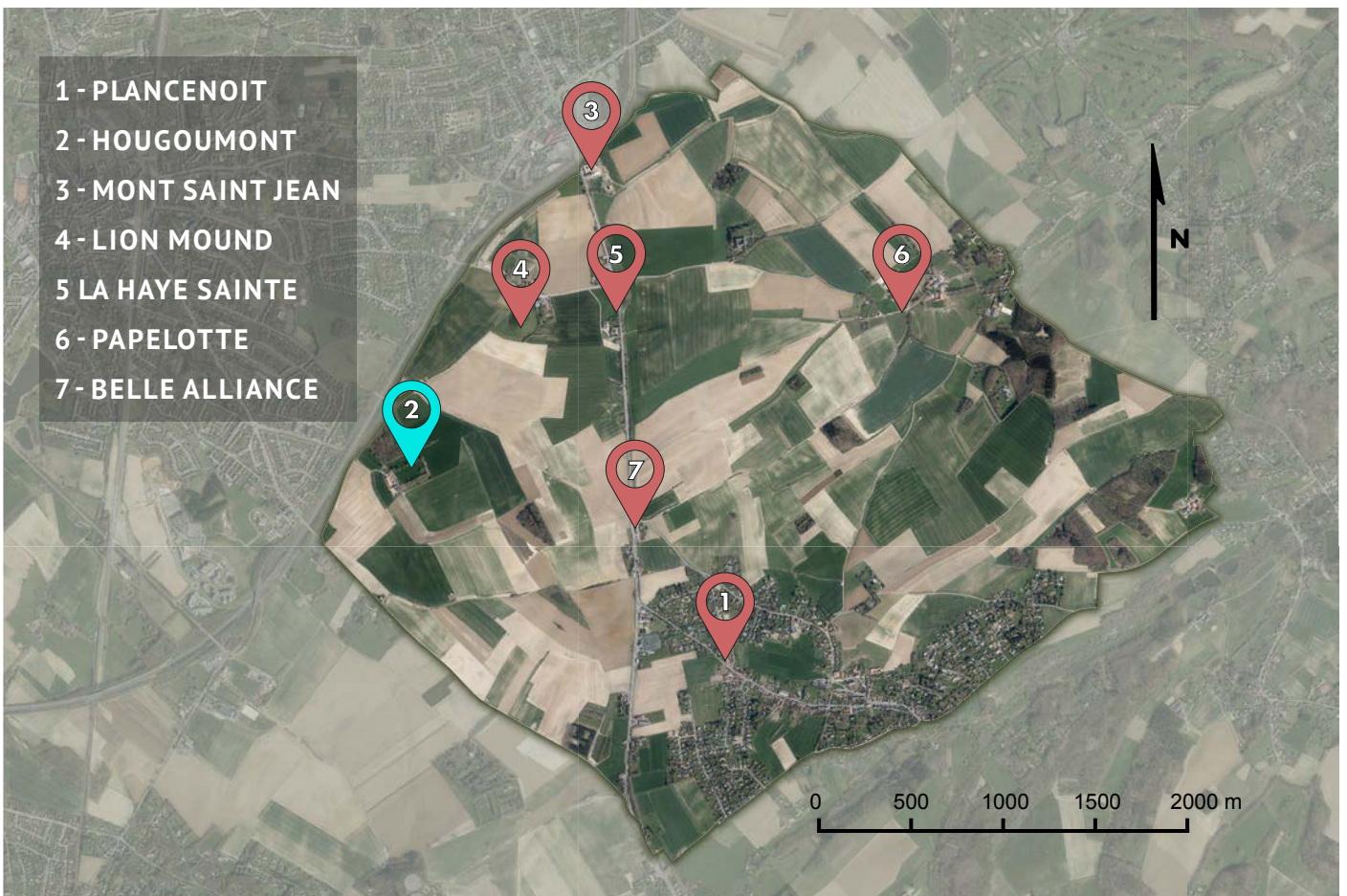
If the British cavalry had miscalculated with heavy cost, the French were about to outdo them. Ney, Napoleon's mercurial second-in-command; 'The bravest of the brave' had disappointed with his irresolute performance at Quatre Bras. Now, his boldness was to bring disaster to the massed French cavalry. Believing that he had observed Wellington's men beginning to desert the ridge, he took personal command of more than 8,000 horse, and led them forward. With Wellington's finest cavalry broken, and the infantry seemingly shrinking before the artillery, he scented victory. But the infantry had not fled, and the ridge concealed a wicked hazard – a sunken way that would blunt the charge before the cavalry found themselves in amongst the Allied squares. A properly-formed square is a daunting prospect. A hedge of bayonets, spitting fire and lead as the horses turn aside from the impossible barrier. If disciplined troops can be made to stand against cavalry, they can prevail, and at Waterloo they did, with terrible results amongst men and their mounts. As the horses approached, they were flayed with canister shot – Captain Cavalie Mercer's G Troop, Royal Horse Artillery, tearing holes in their formation with the deadly three-ounce balls – 44 from each shot – then famously taking shelter beneath their nine pounder cannons as the cavalry came through. As many as ten times, Ney collected his men, turned them and came on again. Each time, the assault failed, and each time they were fewer. The Marshal himself had four horses killed beneath him, but he lived. Many of his men did not, and in this protracted, bloody, futile period, the French cavalry was utterly spent.

At 18:00, after two hours' of assault, the offensive was finally called off. With only a few more hours of daylight left, time was running short, and Napoleon, at last, was aware of the pressing Prussian threat to the east. By now, the Young Guard were fighting a bitter street action to hold Plancenoit. As they tried desperately to hold, Napoleon played his final card, unleashing his reserve against Wellington's right. Finally, his most treasured troops, the Old Guard, were committed. Together with their comrades of the Middle Guard, and such other infantry units as could be spared, they climbed the ridge, weathering first the canister of the Dutch Belgian artillery and then the increasing musketry of the flanking squares. They could not, however, stand against the British force – among them Byng's Guards Brigade – who, on a single word of command, rose up from cover, 'presented', and commenced firing by volley. It was enough. The Guard wavered, then halted, and then, as the Allied bayonets were lowered for the advance, turned; a withdrawal became a retreat and, finally, a rout.

What followed was gruesome – the street fighting in Plancenoit and Genappe, the looting of the dead and murder of the wounded, the piles of broken men and horses, and the Allies so exhausted that they slept where they fell.



The 1777 Ferraris Map, with key locations of the battlefield (see key on image below). Hougoumont Farm is circled. This map is available via the Belgian Royal Library (www.kbr.be).



Modern day aerial photograph of the battlefield, with its key locations. Most of the battlefield is currently farmland.

“My heart is broken by the terrible loss I have sustained in my old friends and companions and my poor soldiers. Believe me, nothing except a battle lost can be half so melancholy as a battle won: the bravery of my troops has saved me from the greater evil; but to win such a battle as this at Waterloo, at the expense of so many gallant friends, could only be termed a heavy misfortune but for the result to the public.”

From a letter written by the Duke of Wellington after the battle.



The Duke of Wellington (circa 1815-16), by Thomas Lawrence.

WATERLOO AND ITS LEGACY

There is no doubt that this account of the Battle will contain all the myths and generalisations that crystallise in the days after a war – eyewitnesses are flawed, and so are their accounts. However, we can speak with some certainty as to the devastation left in its wake: Waterloo left up to 45,000 men dead and wounded, at least half of whom were French. Many of the wounded couldn't leave the field, and men who were unable to move had to endure not only the pain and the cold, but also the pitiless attention of scavengers who snatched or tore off them any item of slightest value. Added to the piled bodies of men were the thousands of horses left dead and dying on the field – truly a ghastly spectacle, and one that horrified curious early visitors from Brussels.

It is right that Wellington called the whole affair *“The nearest run thing you ever saw in your life”*. The Battle was so nearly won by Napoleon. If he had been well, if he had been better served by his generals, if the weather had held, if his orders had been understood more clearly, if he had not underestimated Blücher and Wellington, the battle might have been a French victory. What is certain is that on the 15th July Napoleon handed himself over to the protection of the captain HMS Bellerophon, the Bourbons were restored to the Tuileries Palace, a Peace Treaty was signed, and France's borders returned to their pre-revolution dimensions.

The Battle of Waterloo was to have deep-rooted effects, much in favour of the British. With a 'balance of power' preferred on the continent, the Treaty drew up terms which strove not to remand the losers or favour one victor over another (although of course Britain and Prussia were able to keep many of the choice territories, and the financial penalties on France far exceeded those of 1814). The Napoleonic Wars engaged greater fighting numbers than had ever been seen before, and are often attributed with the birth of 'Total War', the principle that all the resources of a society are mobilised for the war effort, and that even civilian resources are legitimate military targets. That said, the effects of Napoleon's exploits were not to be laid to rest alongside him in 1821. His reforms and social ideas were very much longer-lasting than his military successes, and to this day his legal system and many of his other reforms – scientific and social – survive in France. They spread well beyond those borders too, and it might be said that the nationalism he encouraged lit a flame that would ultimately topple the established order in many European countries. These included his own: the inept reign of the Bourbons could not survive, and was finally toppled in 1832 in favour of a constitutional monarchy. A proper Republic would follow, eventually. ■



‘The meeting of Wellington and Blücher, at La Belle Alliance’ (1819), by William Heath. Image source: The British Library



Gebhard Leberecht von Blücher (circa 1815-1819), artist unknown.



'Napoleon Crossing the Alps' (1802), by Jacques-Louis David.



About the author:

Charlie Foinette studied archaeology at UCL before joining the Army in 2001. His subsequent career fostered a keen interest in the welfare and recovery of injured service personnel, whilst service in the Army's oldest regiment continued to inspire his love of history. Together with Mark Evans, Charlie founded Waterloo Uncovered in 2015.



About the author:

Florence Laino is a professional archaeologist with L - P : Archaeology, where much of her work focusses on Public Archaeology. Flo works for Waterloo Uncovered as its editorial and publications officer. Interested in reading more about the dig? See our reports page on the Waterloo Uncovered website: www.waterloouncovered.com/our-archaeology-so-far/

ARCHAEOLOGY ROUNDUP: EXCAVATION RESULTS 2015-2016

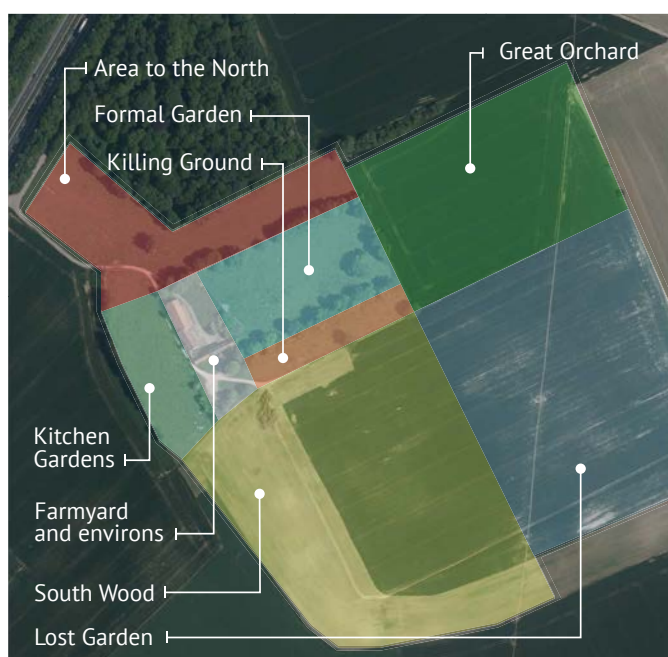
Why are we excavating at Hougoumont? What did we set out to investigate? What results have emerged? Professor Tony Pollard gives us the highlights of two years' excavation of Hougoumont...

For each year of excavation, we have produced a project design, setting out the specific research questions for each area of investigation (published online at www.waterloouncovered.com), all of which are geared to furthering our understanding of the battle and the landscape in which it took place, and the role of Hougoumont in particular. When archaeological fieldwork on any given site reaches its second year, some real progress should be expected as far as accomplishing the project's research objectives are concerned. This article will set out to establish to what extent this is the case with Hougoumont, which has been the first area of the battlefield to be subject to intensive investigation by Waterloo Uncovered.

2015 : EXCAVATION IN THE FORMAL GARDEN AND THE 'KILLING ZONE'

The focus in July 2015, the first full season of investigation, was the Formal Garden and the area in and around the so-called "Killing Ground" (or zone) immediately outside the southern wall of the garden. This work helped us understand the nature of the garden itself – although garden features visible in the geophysics results did not, for the most part, reveal themselves as readily-observable archaeological features. The work in the Killing Ground shed light on the nature of the barriers, which took the form of hedges, ditches and walls, and which, during the battle, aided the defence of the farm against repeated French attacks. Further to this, Alasdair White has, in this review, produced an in-depth historical analysis of these barrier features—it should perhaps not come as a surprise that hedges can play a role in keeping attackers at bay. There are other battles, including Marston Moor in 1644 and the fighting in the *Bocage* following D-Day in 1944, where this was the case, but they were also incorporated into the outer works of forts, a good example being Pondicherry in India (where ironically a British-led force captured a French fort in 1761).

In 2015 also, the initial metal detecting programme boded well for the recovery of metal objects dropped during the battle, most particularly here in the form of lead projectiles, such as musket shot. Results within the Killing Ground and inside the Formal Garden led to some tentative statements about the nature of the French assault against the wall and the exciting possibility of an incursion into the east end of the garden. A return to these areas would therefore be an important part of the 2016 programme of metal detecting. It should be said that the field to the east of the garden, which at the time of the battle corresponded to the Great



Aerial photograph of Hougoumont farm, showing the different zones of interest.

Orchard, was not accessible in July 2016 due to the presence of a potato crop.

We will therefore begin this assessment of results with the metal detecting survey from 2016, and from there move on to excavation, which in that year took on a fresh importance.

2015-2016 : METAL DETECTOR SURVEY

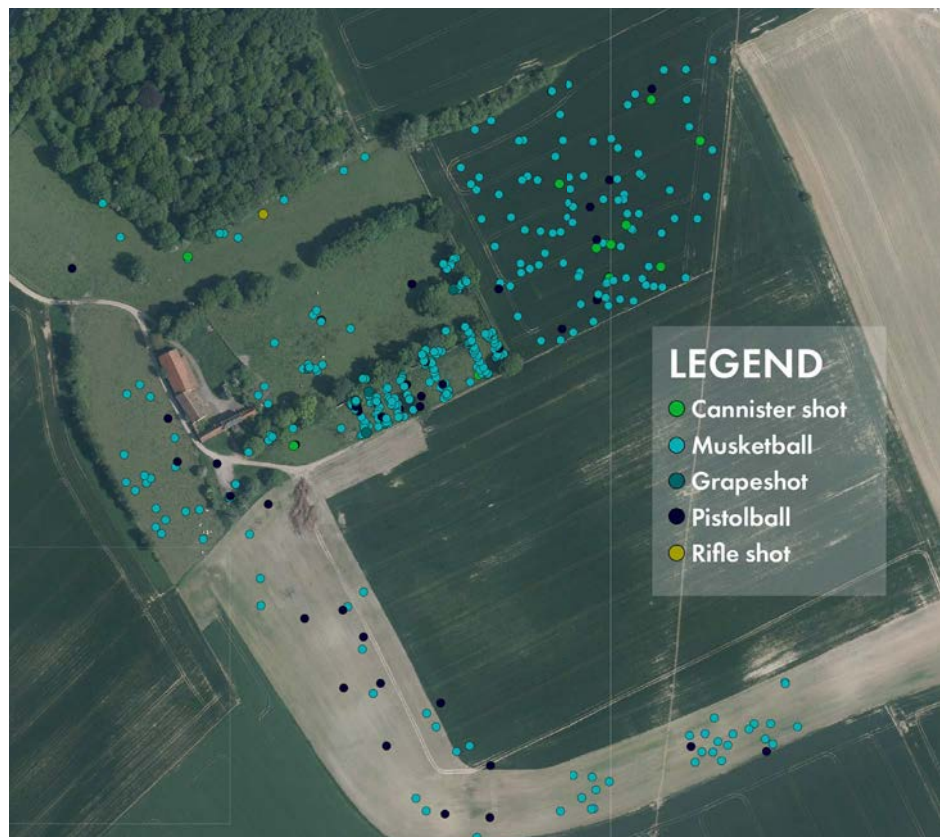
The first tentative foray into metal detector survey was made in April 2015—during an initial reconnaissance prior to the first main season in July 2015—and included a sweep of much of the Killing Ground. The results were disappointing to say the least, especially given the high amount of musketry which must have been directed into this area as the French made their dash toward the defended wall across a narrow strip of open ground. The recovery of only two musket balls caused some degree of consternation, which gave way to some depressing hypotheses. One of these was that illegal metal detecting, which the team had witnessed taking place in the vicinity, had been so prolonged and intensive that most of the musket shot from within the shadow

of the walls had been removed. This contrasted with areas further away from the wall, particularly in the open fields to the south (the 'South Wood' area – which was occupied by woodland at the time of the battle), from where greater numbers of musket shot were recovered. The conclusion drawn from this disparity at the time, was that detectorists had favoured the lee of the wall, as it helped to conceal their activities, whereas they would have been far more exposed operating out in the open fields. This was a disappointing hypothesis but given the circumstances it seemed a distinct possibility.

It was not until July 2015 that an alternative and less depressing picture began to emerge. Using the mechanical excavator, a shallow spit of soil was removed from between the wall and the field fence, the latter marking the southern extent of the Killing Ground. The exposed surface was then metal detected. Encouragingly, many signals were returned, which were flagged and then excavated (with locations marked using GPS). The majority of these finds were musket balls, and further recoveries were made with the removal of a further spit (it is now clear that no more than two c. 10 cm spit removals are required to recover all or most of the objects within the 30-40 cm of topsoil in this area).

The original purpose for excavating into the topsoil in this area was to define the character of a linear anomaly identified by the geophysical survey. This anomaly ran east to west, roughly along the centre of the Killing Zone. Exposure via topsoil stripping at several locations revealed it to be a trackway around two metres wide and consisting of a roughly cobbled and much-denuded surface set into a clay bedding. This track does not appear on any of the contemporary maps and so was assumed to post-date the battle, a conclusion verified by the recovery of at least one musket ball from beneath it.

The inability of the metal detectors to penetrate the full depth of the topsoil from the surface, or at least to detect artefacts at depth within it, is somewhat puzzling, especially as this depth is not beyond the range of reasonable-quality detectors. One reason



The distribution of metal detected and excavated artillery is bringing us fresh understanding of how the battle for Hougomont played out.

The map here shows the position of 458 artefacts found between 2015-2016.

might be the high level of soil compactness in this area, which does not appear to have been ploughed for some considerable time.

A similar process has been adopted with the Formal Garden, and again, the removal of spits has enhanced the recovery of artefacts. Similar issues do not seem to relate to the open fields, where ploughing has taken place regularly and indeed in most instances, detecting took place in fields ploughed not long before the survey. At the time it was not felt that the recovery of artefacts in these areas had been inhibited by depth of soil, compaction, moisture content or other factors.

However, the removal of soil in spits prior to further sweeps of the detector did not take place in our survey of the South Wood area. The reality is that detector surveys on battlefields rarely, if ever, pursue a stripping strategy; it is, after all, expensive and time consuming. This poses important questions for the practice of battlefield archaeology that we will be investigating further across



Metal detector survey alongside archaeological excavation enables the rapid recovery of artefacts.

the lifetime of this project: how much material of this kind has been “missed” by even the most successful of battlefield surveys to date, where a stripping strategy has not been implemented; how much of this material has been lost forever because subsequent site development has made return impossible?

Leaving aside recovery rates and the impact of illegal detecting, it is the pattern of distribution which was of paramount concern here. Not surprisingly perhaps there is a greater concentration of British/Allied musket balls located in the southern half of the width of the Killing Ground, and correspondingly the greatest concentration of French musket balls was recovered from the northern half, towards the wall. There is a possibility however, that the Allied Nassau troops who defended the wall through the first part of the day were using French muskets (Andrew Field, personal communication).

There is a possibility that there was also a hedge running along the southern limit of the Killing Zone—as suggested by historical analysis (See article by Alasdair White: *Hedging your bets*, page 42) and the excavation of archaeological features at the Eastern end of the Killing Zone in 2015. This would separate the Killing Zone from the wood and might be expected to control movement into the Killing Ground from the south. If this was the case then one might expect this to be represented in the scatter of lead shot in the Killing Ground, with a higher concentration of musket balls where the French broke out into the open and advanced on the wall, perhaps debouching from a number of voids or gaps in the hedge. At present, however, it is not possible to identify clear concentrations in the scatter, with a relatively even spread across the length of the Killing Ground, at least as far as the transects thus far detected are concerned. Once again, an objective of the 2017 programme of metal detecting will be to continue to fill in the gaps along the length of the Killing Ground (though the area towards the east has been disturbed by quarrying for sand).

There has been speculation over the course of the project about the ability of the hedge to have either deflected flying shot or to have stopped it entirely. Some experimentation in this area might be useful, utilising a modern hedge and muskets to see if there is a practical way to explore this question.

If we are to be led by the archaeological data alone, a worthwhile exercise would be to carry out some metal detecting on the southern side of where the hedge lay – that is, beyond the fence line and into the field once occupied by the wood. This might help to establish how much British/Allied musket shot was able to penetrate the hedge. Few, if any, fired French musket balls would be expected in this area as presumably the attackers would not open fire until they had cleared the hedge and could see their targets on the garden wall (notwithstanding the possibility that some defenders may have been using French muskets).

This is, however, problematic, as it would entail disturbing both the track currently running along the southern side of the fence, and the farmer’s fields, which are in full crop when the field project is active during July.

An interesting proposition would be to combine the metal detecting exercise suggested above and an experimental programme. If a very thick hedge were compared to a sparser growth then a difference in penetration might be expected, with the thicker hedge holding back more of the musket shot. If these results were compared to a metal detector survey to the south of where the hedge at Hougoumont stood then it might be possible, from the recovered densities of shot, to estimate what type of hedge stood there – i.e. was it a dense wall-like hedge or did it have a sparser, more permeable structure?



2015 excavation of the ground-truthed, cobbled trackway.



2015 : Excavation within the Formal Garden.



2015 excavation in the Sunken Way, the shallow ditch north of Hougoumont that was used as a supply run during the battle.



Dominique Bosquet taking monolith samples from the bottom of the sunken way, for environmental analysis.

2016 : EXCAVATION WITHIN THE FORMAL GARDEN

As metal detecting continued in the Killing Ground, so it also progressed within the Formal Garden. More musket shot were recovered in 2016, adding further evidence for a fire-fight in the garden, and some scant documentary evidence for this incident was cited in the report for 2015 (Waterloo Uncovered, 2015, 37). As noted above, it has previously been assumed that all 0.69 calibre musket shot were fired by the French, which is obviously convenient as far as working out who fired what, is concerned. However, it has recently been suggested, on the basis of documentary evidence, that some of the Allied troops, particularly those in Dutch/Belgian service, would have been using French muskets – many of these troops were previously in French service after all.

Whichever type of musket was being used by some of the wall defenders (the Nassau troops were reinforced by British Guards in the afternoon) the evidence from the garden is indicative of fighting within it. The finds of British and French-type musket balls display evidence for firing and impact (see Picard, page 40, on WU lead shot analysis), and are therefore not simply unfired balls that have been dropped, or shot balls which have cleared the wall and fallen at the end of their range (though some of them may have been fired by French attackers on the wall). In addition, there were a couple of finds of iron grape shot in the eastern end of the garden. These are most likely from French cannon but, as yet, the direction of fire which put them over the wall, from the east or the south, is uncertain.

It is hoped that on-going analysis of this assemblage will shed more light on what has thus far proven to be an intriguing glimpse of a previously poorly understood event within the battle for Hougoumont. Further investigation in 2017 will also help to clarify what took place in the garden.



Excavating the Formal Gardens in the 2016 season.

2016 : EXCAVATION WITHIN THE COURTYARD

One of the most rewarding elements of the 2016 season was the excavation of trenches in the courtyard, in the area to the east of the north gate. There were reasons to investigate an area in the courtyard and these are summarised below. The yard is presently occupied by a range of buildings against the southern wall (in what, at the time of the battle, would have been a separate, smaller yard), and the great barn and adjacent building running along the west wall, which currently accommodate the gift shop and audio visual display. Sitting away from the walls, towards the centre of the courtyard, is the chapel and the small fragment of wall from the original chateau, which was attached to the private chapel. No visible trace of other buildings survives, although contemporary drawings and plans show buildings along the north wall, immediately to the east of the gate, and along the east wall.

Drawings made of the farm not long after the battle show these buildings to be burned-out shells which, like the chateau, were so badly damaged by fires resulting from battle that they were demolished. This turned two yards into one and gave this interior space a much more open and expansive aspect. It is apparent from the drawings that these buildings, and particularly the one against the north wall, were of a very substantial nature, having at least two stories within imposing walls (the building against the east wall does not feature clearly in these drawings due to the perspective, which is generally from the north-west).

The primary reason for excavating within the courtyard was to establish whether buried remains of buildings survived in areas now entirely clear of built structures or any of their visible remains.

Previous excavations, including those in the 1980s and those which accompanied the renovation of the farm prior to 2015, have suggested that remains do survive but closer to the chapel (this latter work exposed foundation remains of the chateau). As far as records show, there has never been any excavation in the northern portion of the yard, where the buildings referred to above once stood. It was proposed that if substantial buried remains were encountered then the outlines of the buildings could be marked on the ground to give visitors a sense of what the farm had looked like. A more ambitious proposal was that remains might be left exposed following excavation, again in order to enhance the visitor experience. However, it was recognised that this would be a complicated and potentially expensive proposition, as archaeological features, even those made from stone, will disintegrate over time if not adequately protected.

A second motivation was to check the accuracy of the contemporary plans and drawings. Some of the plans show variation in the layout of the buildings – with the north and east ranges joined in some and shown as separate buildings in others. Aligned with this was a desire to more fully understand the nature of the buildings that stood at the time of the battle. These were actively used in the defence of the farm and can therefore be regarded as key features within the wider battle-scape of Waterloo. The incursion of French troops through the north gate, and their shooting down in the courtyard following the closing of the gates by British troops, has become well engrained within British perspectives on the battle. The Coldstream Guards in particular are remembered for this action and a monument depicting the dramatic closing of the gate now stands just inside



Excavation in one of Phil's trenches revealed the remains of a well-built stone culvert. The 2017 field season will reopen trenches in this area of the courtyard to see if any further building remains survive.



The interior of Hougomont, reduced nearly to a heap of ruins. James Rouse (1817).

the gateway (which itself boasts a new pair of gates). As previously mentioned, the courtyard today appears to be a much larger space than it was at the time of the battle. Defining the position and scale of the buildings through excavation will give a much better idea of a more claustrophobic space and thus add much to the comprehension of the action associated with the French incursion – defenders might well have shot down upon the French party from the buildings that enclosed the small space in which they had become trapped with the closing of the gates.

A third—and important—reason to excavate in the courtyard was to give the project's veteran volunteers the opportunity to work on a task of traditional archaeology, involving standard excavation and recording techniques. These can often be difficult to accommodate within a battlefield-centred project, where much emphasis is placed on techniques such as topographic and metal detector survey. With this in mind, it seemed fitting that this element of the project was overseen by Phil Harding of *Time Team* fame, who, in keeping with the Waterloo Uncovered ethos, regards the transfer of skills as a key task. It was rewarding indeed to see Phil and his team enjoying the task at hand and one another's company.

Three trenches were opened in the northern part of the courtyard. The most impressive results came with the exposure of the western wall of the building which ran along the eastern wall of the courtyard. Running under this wall was a covered drain, which ran out into the courtyard to the west of the wall. This building appears to have been a stable block, and the benefits of a well-built drain in such a structure do not need to be rehearsed here. The levels of preservation observed in this trench were

impressive and encouraged the opening of two further trenches in the vicinity.

The first of these was located to the north of the first trench. It was hoped that this location would provide evidence for the building along the north wall, which ran at right angles to the building mentioned above. Upper layers included debris from the demolition of buildings and the re-levelling of the yard that followed. An east-west running wall was uncovered but further work will be required to establish any structural relationship to the building running along the east wall.

Perhaps the most intriguing results from the courtyard excavation were obtained from the third and smallest trench. This was placed close to the gate, in the hope that it might expose the gable end of the building which ran along the north wall and which, from illustrations, appears to have been one of the most imposing structures in the farm complex. Once again there was a layer of relatively recent overburden directly below the present ground surface, under which were archaeological remains of interest. Unfortunately, time did not permit the completion of work on this trench but removal of the overburden not only exposed structural evidence, in the form of walling, but also what appeared to be associated layers containing burnt material. It was not possible to verify the relationship between the various elements but there is a distinct possibility that these deposits might represent intact destruction layers related to the burning of the building during the afternoon of the battle in 1815.

The identification of relatively well preserved structural remains in the courtyard bodes well for site preservation across the area. Further work, commencing in July 2017, will hopefully shed more light on the nature of the buildings that stood here until their destruction during the battle and the demolition of the burned-out shells sometime thereafter. The identification of what appear to be *in-situ* destruction deposits is most encouraging, but only further investigation will clarify whether these relate to burning of the buildings during the battle or the later demolition of the fire-charred remains.

2016 : POSSIBLE GRAVE SITE OUTSIDE SOUTH GATE

Given the number of men killed during the fight for Hougomont (perhaps 1500-2000), any one or more of the geophysical anomalies identified by the team from the Ghent University might have proven to be graves. Thus far, however, none of those excavated, either inside or outside the Formal Garden, have proved to contain human remains. Prior to the excavation in the car park close to the south gate, the project had not deliberately sought to locate graves, though obviously there was a chance that they would be encountered. The policy of Waterloo Uncovered, should this occur, was to excavate only to the extent required to establish the extent and character of the feature and then to consolidate the site in order that the grave could be marked in a suitable manner and preserved.

However, this situation changed with a direction from the Wallonian heritage department of SPW, which encouraged Waterloo Uncovered to collaborate in an attempt to locate a possible mass grave close to the southern gate, outside the building complex. This location has long been associated with a grave, thanks to a colour illustration depicting the burial of naked corpses in the open area just to the south-west of the gate, a location today occupied by a concreted car parking area. There is a good amount of detail in the painting, including kit and clothing stripped from the bodies being tipped into the grave pit,

battle damage on the fabric of the buildings and further bodies, presumably French, lying at the foot of the wall at the west end of the Killing Ground. These latter have already been stripped naked, in contrast to those being placed in the grave, which appear to have been stripped at the grave side, thus suggesting they are the corpses of British/Allied troops removed from inside the walls of the farm (the red tunics lying by the grave would fit with this scenario).

There is a second illustration from a slightly different angle, and apparently by a different hand, which shows naked bodies being heaped on a pyre of brush wood, presumably in preparation for cremation. The location is very close to the site of the grave-pit portrayed in the first illustration but the relationship between the two events can only be guessed at. There are accounts of bodies in shallow graves being washed out by heavy rains later in 1815, some of which were burned on pyres in a desperate attempt to dispose of them properly. It might be this turn of events which is illustrated in the two renditions, though the fresh appearance of the bodies on the pyre and the absence of any trace of a previous grave does not stand up to close analysis. As discussed below, artistic licence is always something that needs to be taken into account when considering non-photographic renditions, and not even photographs can always be trusted as a true account.

Prior to the intervention of Waterloo Uncovered a ground penetrating survey of the car park was undertaken by Tim Sutherland and colleagues in support of a TV documentary on the Battle of Waterloo (<http://tts509.wix.com/archaeologyawaterloo>). This suggested subsurface disturbance in the area of the car park, but this should perhaps not come as a surprise given the works that must have accompanied the construction of the car park here, which as a minimum involved the pouring of a concrete slab – an act which is usually preceded by the creation of ‘made ground’ through the deposition of rubble and other material as a foundation deposit.

Waterloo Uncovered did not regard the investigation of the car park area as a priority as far as its own aims and objectives were concerned, not least because of the disturbance it would cause through the breaking up of the slab. However, the regional authority was aware that car parking facilities at Hougoumont were inadequate, given increased numbers of visitors thanks to the renovation by Project Hougoumont. In keeping with current heritage management policies, a decision was therefore made to establish beyond doubt whether a grave was present beneath the current car park prior to any further development taking place on the site. The only way to carry out what is known as ‘ground-truthing’ was to remove the slab, at least in part, and excavate the deposits beneath it. Given the activities of Waterloo Uncovered at Hougoumont it made sense to collaborate with SPW in carrying out this operation—the lead was taken by SPW and the operation directed by Senior Archaeologist Dominique Bosquet. An important contribution from Waterloo Uncovered was the provision of a forensic anthropologist in the form of Gaille MacKinnon.

As detailed elsewhere, an invasive examination of the car park was executed during the 2016 programme of investigations. Despite a number of archaeological horizons being encountered, some of which add to our understanding of the history of the farm, no grave was encountered. The only indication of activity possibly related to burial was a single human finger bone, which in isolation cannot be taken as strong evidence for a mass grave (though see below). There are several possible conclusions that can be drawn from this negative result:

The first is that a grave did exist in the location investigated,

but at some point later the human remains contained within it were removed and any trace of the pit eradicated. This picture fits with the tradition that in the years following the battle, graves were quarried for the remains of the dead for commercial gain.

The story goes that the bones were exported to England, where they were ground up into bone-meal which was then mixed into agricultural soils to promote the growth of crops. Hard evidence for what today appears to be a highly disrespectful and mercenary activity is hard to come by, though examples of Waterloo teeth – dentures created from teeth removed from the battle dead – have become well known, not least through the archaeological excavation of cemeteries prior to urban development (e.g. mid 19th century graves from Spitalfields in London). There are some contemporary accounts of the practice of bone removal, and the following quote from the November 1822 edition of *The*



A view of the Chateau d'Hougoumont, workmen piling timber upon a pyre to burn the French dead". James Rouse (1817).



Opening up the trenches by the south gate in the 2016 field season.

Gentleman's Magazine will stand as a rare example:

"The neighbourhood of Leipsic (Leipzig), Austerlitz, Waterloo and of all the places where, during the late bloody war, the principal battles were fought, have been swept alike of the bones of the hero, and the horse which he rode. Thus collected from every quarter, they have been shipped to port of Hull and thence forwarded to the Yorkshire bone-grinders, who have erected steam-engines and powerful machinery for the purpose of reducing them to granular state. In this condition they are sent chiefly to Doncaster, one of the largest agricultural markets in that part of the country, and are there sold to the farmers to manure their lands."

Quoted from Turner (2015).

Attitudes toward the dead, and particularly those killed in battle in that period, were different to today's. It was only during the First World War, a full century later, that the names of individuals other than officers became commonplace on war memorials (though there are some exceptions at Waterloo). Furthermore, it was only during the First World War that the innovation of dog tags allowed for the identification of those killed en-masse in battle.

The location of the graves at Waterloo would have been well known, and illustrations such as those previously referred to might even have served as guides. Other graphic works depicting the battle's aftermath, such as renditions of La Haye Sainte, show graves marked by mounds of earth adjacent to roads and buildings, while writers from the time describe graves scattered across the landscape of the battlefield like so many oversized molehills (see *Waterloo: The Aftermath* by Paul O'Keeffe, 2015, for more on this). By the time of the First World War, field graves were regarded as a temporary measure and, after the war (up until 1921), much effort was put into the recovery of bodies and re-internment in military cemeteries – as seen in the numerous Commonwealth War Graves Commission cemeteries that today punctuate the landscape of the former Western Front. It is possible that battlefield graves at the time of Waterloo might equally have been regarded as a temporary measure, indeed in some respects an inconvenience; it is unlikely, however, that their removal was accompanied by subsequent reburial.

If we consider the foregoing alongside the absence of graves at every other location thus far investigated at Hougoumont, it could be suggested that a grave might once have been outside the south gate but was later plundered for bones. It is here that our single finger bone may have something to add to the story.

It is not uncommon for the small bones of hands or feet to be left behind when skeletal remains are disturbed or removed from graves, for no other reason than their small size and disarticulation. On this basis it might be suggested that this bone, taken into account with the anecdotal evidence for bone removal in the years following the battle, might add some weight to the argument that a mass grave had once been located here. Over time, any evidence for what might have been a shallow pit could have been removed by other activity, as evidenced by the various phases of ground disturbance and deposition identified in the excavation trenches.

An alternative explanation might be that the bones were washed from the grave by the rain and the remains then disposed of through the use of fire (as per the second illustration). Such conclusions might also fit with a general absence of accidental

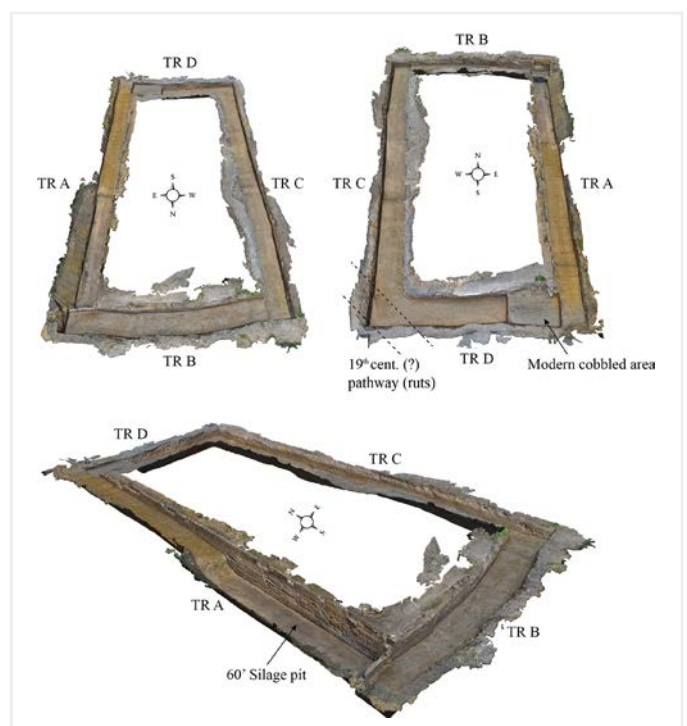
grave discoveries over the past two hundred years. There are anecdotes about stray bones being ploughed up but it is quite striking that there are no well-known stories of graves being encountered while field drains were dug or houses built – the exception being the construction of the Lion Mound in the 1820s, during which bones were reported to have been reburied.

An exception to this failure to locate graves is the case of the single skeleton exposed and excavated during monitoring works carried out during the construction of the new museum car park on the ridge of Mont St Jean. It has been suggested by the excavator (Bosquet et al., 2015, 19) that this individual, possibly a member of the King's German Legion, was hastily buried by his comrades after dying on his way to a dressing station behind the lines. This single inhumation might, however, be a case of the exception proving the rule, with some single inhumations or small group graves escaping the attention of post-battle bone harvesters, while larger mass graves—which were more obvious in the landscape and promised rich returns—presented more attractive targets.

A further possible explanation for the failure to locate a grave outside the south gate is that it was never there in the first place.



Excavating the Hougoumont car park.



3D models of the excavated area in the car park.

The issue of artistic licence has already been raised as a factor that needs to be taken into account when dealing with illustrations as documentary evidence. The south gate of Hougoumont represents a striking architectural feature with a strong association with the battle, driven home by the damage caused to its fabric by shot and shell. It would, therefore, make a dramatic backdrop to any attempt to illustrate the process of burying the dead. This does not, however, mean that there were no graves close to this location, especially given the number of dead bodies which must have littered the southern flank of the farm (most of these are likely to have been French).

One possibility is that the grave in question was slightly further south than is suggested by the painting. Indeed, the geophysical survey shows a number of pit-like anomalies not far to the south of the three chestnut trees which mark the southern boundary of the car park and the field beyond (these are known to have been standing at the time of the battle although sadly only one of them is still living). In 1815 this field, which has the anomalies toward its northern edge, was covered in trees, and was ground that was bitterly-contested. There are accounts of graves dug in tree-covered areas – though most particularly in the Great Orchard. It is possible that the image of a grave in a wood was considered by artists to be less striking than a composition with the southern gate for a backdrop.

There is another example where trees have been removed by an artist in order to include the view of the south gate in their work. Denis Dighton's contemporary painting of the battle for Hougoumont has the Coldstream guards putting in a counter-attack against the French as they advance through the wood.



Denis Dighton's *Defence of the Chateau de Hougoumont* (1815).

However, the artist has limited the trees to the right hand edge of the frame, rendering the rest of the foreground action in the open, thus presenting the south gate as an eye-catching backdrop. Using artistic licence to shift the grave further north and closer to the gate would create a stronger impression of the aftermath of the battle.

The absence of any recognisable evidence for a mass grave below the car park has served to direct attention to a pit-like anomaly further south. The only way to prove whether or not this represents the grave portrayed in the illustration is to 'ground-truth' it through excavation, and this is something that the team intends to do during the 2017 season.

LOOKING FORWARD: THE 2017 WATERLOO UNCOVERED FIELD SEASON

The foregoing has provided a summary of interpretations drawn from the 2016 investigations at Hougoumont, and has signalled the advances which archaeology is making in our understanding of the battle and its aftermath.

Highlights include the identification of fighting inside the Formal Garden, for which there is at present very little documentary evidence. Also noteworthy has been the identification of relatively well-preserved remains relating to buildings in the southern part of the courtyard. On the other hand, the failure to locate a grave outside the southern gate might be regarded as a disappointment, but on the positive side this might have provided evidence for the wholesale removal of grave deposits in the decades following the battle.

It should be noted, however, that any conclusions based on these investigations can only be regarded as preliminary, with further work required on both the post-excavation analysis of the data and further work in the field. When it comes to the latter it is possible to identify three key objectives which will feature in the research design for 2017:

1. Further metal detector survey within the Formal Garden and the Killing Ground. The former will hopefully shed light on the scale and intensity of the fighting within the walls, while the latter will hopefully provide evidence for the location of the incursion over the wall.

2. Continue excavation in the courtyard, with a key focus being the building against the north wall, the remains of which might include direct evidence for the defence of Hougoumont, and the destruction of the building during the battle

3. Examination of the anomalies to the south of the chestnut trees, which might represent the grave-pit previously thought to have been under the car park. ■

REFERENCES

- Bosquet, D., Yernaux, G., Fossion, A., and Vanbrabant, Y. (2015). *The Waterloo Soldier. An archaeological investigation at the heart of the conflict*. Service public de Wallonie: Namur. Available at: <http://spw.wallonie.be/dgo4/tinymvc/apps/patrimoine/views/Documents/archeologie/soldat1815/Catalogue-waterloo-web-EN.pdf> [Accessed 9th May 2016].
- Turner, J. (2015). *The bones of Waterloo*. Available at: <https://medium.com/study-of-history/the-bones-of-waterloo-a3beb35254a3> [Accessed 9th May 2016].
- Waterloo Uncovered (2015). *An Archaeological Evaluation at Hougoumont Farm, Braine l'Alleud 18th-31st July 2015*. Available at: <http://www.waterloouncovered.com/learn/archaeology/our-archaeology-so-far/>



About the author:

Tony is Professor of Conflict History and Archaeology and Director of the Centre for Battlefield Archaeology at the University of Glasgow. He has worked on conflict archaeology projects and iconic battlefields across the globe, and has worked widely in television, bringing battlefield archaeology to the public's attention with the BBC television series 'Two Men in a Trench', which he presented with Neil Oliver. Tony is the co-founder and co-editor of the *Journal of Conflict Archaeology* and has written widely for both popular and academic audiences.

STORIES

VETERAN

TYLER CHRISTOPHER VETERAN, DIG 2015

Royal Green Jackets, The Rifles.

I got involved in Waterloo Uncovered in 2015, when Mark Evans was looking for veterans to take part in their July 2015 excavation. The information was passed on through contacts at Operation Nightingale, and I was interested, so WU got in touch and gave me all the details. Of course, I wanted to go!



Unfortunately I couldn't make the whole duration of the trip, but I was able to come out on the train to take part and help out for a few days. I joined a team in a trench, looking for an outer wall of the farm that was no longer present. Although a lot of the digging had been done before my arrival, there was still plenty to do. I also helped out with the recording, as I'd had previous experience with it – although with archaeology I much prefer digging to writing and reporting!

Over the course of the trip I learnt a lot of things, starting with where Waterloo was. While I already knew my own regimental history and link to Waterloo, you rarely care about other units' regimental history and it was really interesting to learn about the Coldstream Guards' side of the battle. Their fight at Hougoumont, surrounded and running out of ammunition, reminded me of modern tours of Afghanistan, bar the higher numbers of men involved – so it was easy to relate to the 1815 soldiers. On the other hand, I would not have wanted to be the drummer boy, the only French soldier left alive from those who broke into Hougoumont.

The History was interesting but the best part of digs like this, from my point of view, is the people I get to work with. Whether they are military, ex-military, or civilians [civilians], everyone bonds. I made good friends on my team, and some of us are still in touch three years later. I love the outdoors – unless it's raining – so I still enjoy getting on dig sites, and I have kept doing it whenever given the chance! ■



Tyler walks up the Killing Zone with archaeologist Emily Glass, who supervised his team.

ROBERT BROGAN

VETERAN, DIG 2016

Royal Corps of Transport / Royal Logistical Corps

My name is Robert Brogan and I served in the army for 15 years with the Royal Corps of Transport and the Royal Logistics Corp. I first got involved with Waterloo Uncovered in 2016 through Major Lappin, who is the Regional Welfare Officer for Combat Stress in the west of Scotland,

He knew I had a keen interest in archaeology and most things historical so when he approached me with an opportunity to be involved with a two-week excavation on the site of the Battle of Waterloo with professional archaeologists, fellow veterans and some serving personnel I didn't have to think long!

If I was to best describe my time on the WU 2016 dig as a whole, I would say it was rewarding, worthwhile and gratifying.

My day would start with a (very) early morning alarm call from my new roommate, John Phillips. He was an ex Warrant Officer in the Royal Engineers who served in the Falkland Islands during the war and was an all-round great guy. After breakfast in the hotel restaurant and a headcount we would head off to the battle site where we would be briefed on the day's events and split into our teams of roughly four, each team being assigned a professional archaeologist.

Each team was given a designated spot on or around Hougoumont Farm, and my team, which (including myself) consisted of Ashley, Carl, Lewis, and Supervisor Archaeologist Emily, were given a trench in the Sunken Way. This area, to the north of the farm, is what can best be described as a long ditch which runs quite a distance behind the farm. However, upon learning the history, we found out that this was a track way (considerably deeper in 1815) used by the troops for shelter and protection during the battle, and also as a supply route to the farm. Our task over the next two weeks was to dig a section across the sunken way, mainly to find its true dimensions and, hopefully, the original track, but also artefacts from the battle along the way.

Throughout the two weeks, as I learned more history of the battle and dug deeper into the sunken way, it was hard not to get a sense that we were walking in the footsteps of an intriguing piece of history and that we were a part of the fact finding and analysis of this. In time I could almost comprehend what the troops involved in the battle were going through. Artefacts in our area of the battle field were of slim pickings, apart from a few musket balls, but each of them has a story behind it and on the final day it's believed we found the original track way, with the possibility of wagon ruts along it.

Being a part of Waterloo Uncovered for that two weeks was special to me, as were the people I met along the way. We worked hard, laughed hard and I'm sure I've gained a few friends for life there. Some things that were maybe missing in my life... Any veteran who may be struggling could only gain from being a part of that. ■



Robert with a musketball he found in the Killing Zone



Robert's team with metal detectorist Gary Craig, in their trench in the Sunken Way. From the left: Carl, Gary, Lewis, Emily, Robert, and Ashley.

GEOPHYSICS AT WATERLOO UNCOVERED

Waterloo Uncovered has been working in partnership with the Ghent University's Soil Management Department to survey the landscape for clues of the battle. Dr Philippe de Smedt specialises in geophysical prospection, and tells us about the department's pioneering methods for seeing beneath the surface.

Searching for the archaeological traces of a battle can be a tricky business. Even for a battlefield like that of rural Waterloo that has been relatively preserved from commercial activity and unaffected by the urban sprawl. Really, we are looking for evidence from just a single day in the lifespan of this landscape's long history, many traces of which will have long since disappeared, 'cleared up' as the debris of war. All the types of things that we might like to investigate—the encampments; the temporary defences; where communications were deployed, medicine administered, bodies interred—might leave only very ephemeral remnants. How can we approach the archaeological investigation of this landscape, a battlefield, which spans nearly 10 km² in size? Here, we believe that geophysical prospection has a vital role to play.

GEOPHYSICAL SURVEY – HOW DOES IT WORK?

Geophysical prospection is a well-known method in archaeology, a non-intrusive means to build an image of possible buried archaeological remains across a given historic area or ancient landscape, which can then be investigated through excavation. This is done by mapping what is beneath the surface according to its physical properties; much like what would happen if you went to the hospital for an x-ray or a catscan. The reason this works so well for archaeology, is because humans, both past and present, are geophysical vandals: every human interaction with the soil changes one or more of its geophysical properties, creating variations that can be detected by a geophysical instrument.

The two main properties we measure are magnetic and electrical conductivity. The first, magnetic, is very much related to human activity, and is particularly good for identifying things like buried structures, any metal materials, or burning events (highly relevant in studying battlefields), which have a clear magnetic contrast to the natural geology. The second, electrical conductivity, on the other hand allows you to directly map very specific soil variables, particularly textures and composition. An archaeological example of this might be where the ground has been dug into; a ditch, dug into a clay environment, then filled-in with a more sandy soil, would create variation that would very easily be picked up by our instrument.

THE DRAINPIPE: IT'S WHAT'S INSIDE THAT COUNTS!

For a long time, geophysical instruments were limited to hand-held devices that had to be physically walked over an area – an extremely time-consuming, not to mention energy-consuming affair for the archaeologist who was previously only able to detect

one property at a time, with one sensor. However, recent years have seen technology blossom in this field, and we are now able to deploy mobile instruments to cover far larger areas, and detect many variations simultaneously using several sensors. This gives us far more complex and finer resolution of data, allowing us to appreciate the depths of these properties more clearly.

This is something that Ghent has done previously with much success, for example in the UK, working with the Stonehenge Hidden Landscapes Project (<http://lbi-archpro.org/cs/stonehenge/>). Here, geophysical survey has revealed a wider landscape scattered with previously unknown archaeological features, much further afield than the standing megalith complex itself. These were traces, not visible to the naked eye, but buried beneath the surface. Through mapping geophysical properties



The innocuous looking and affectionately named 'drainpipe', a very powerful instrument!

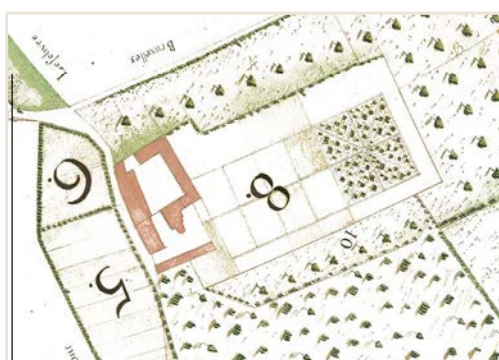
and creating images of the variations and contrasts, several newly identified Prehistoric features have been found, including several Prehistoric ring ditches and other enclosures, contained in deep layers of the subsurface. On the other hand, it has also enabled us to detect the patterning of later features, for example, the linear formations of strip ploughing in later periods, as well as pick up more modern features like a nearby World War Two airbase – still buried, but at much shallower levels. By prospecting this large area, in essence what geophysics allows you to do is dig away into both time and space – allowing you to look into the soil in three dimensions, giving you insight into what is deep and what is shallow, providing more pieces to the puzzle for your given research question.

SURVEYING THE BATTLEFIELD

Surveying the Waterloo battlefield is something we've really just started. To date, we have collected geophysical data for areas in the Killing Zone, Formal Gardens, Kitchen Gardens (to the west), the South Wood (to the south) and Great Orchard (to the east) totalling about 79m², and identified several variations or 'anomalies', which could possibly be archaeological features. One fantastic aspect of the Waterloo Uncovered project is that we are getting instant feedback and validation on the authenticity of these features through excavation, something which often isn't possible.

In the Killing Zone and Great Orchard, we detected stark variations in electrical conductivity and magnetic susceptibility—linear features which seemed to us like human intrusions. In the July 2015 field season, the Waterloo Uncovered team were able to 'ground truth' these features, and excavation proved them to be a cobbled surface (Trench 15) and a ditch (Trench 29) dug into the dark silty soil. Now, whilst these did not prove to be specifically battle-related features, they may have been instrumental in how the battle took place, or contain finds that are significant to the history of the Hougoumont area from before or after the battle.

One of the best examples of where geophysics has helped identify truly 'hidden' features, has been in the Formal Garden area. Our mapping of the electrical conductivity in this area, has detected several geometrical features which most likely relate to bedding trenches and garden features of the formal garden that existed in this area of the Chateau in the 18th and 19th centuries (although the form of the garden no doubt would have changed several times, depending on the preferences of its residents at that particular point in time). We have excavated trenches directly overlaying the location indicated from the geophysical map in the formal garden area (Trenches 4 and 10), yet these textural variations, which show up so significantly within the geophysical map, were visually imperceptible to the team on site—demonstrating how fine-grained the variations for certain classes of archaeological evidence can be.



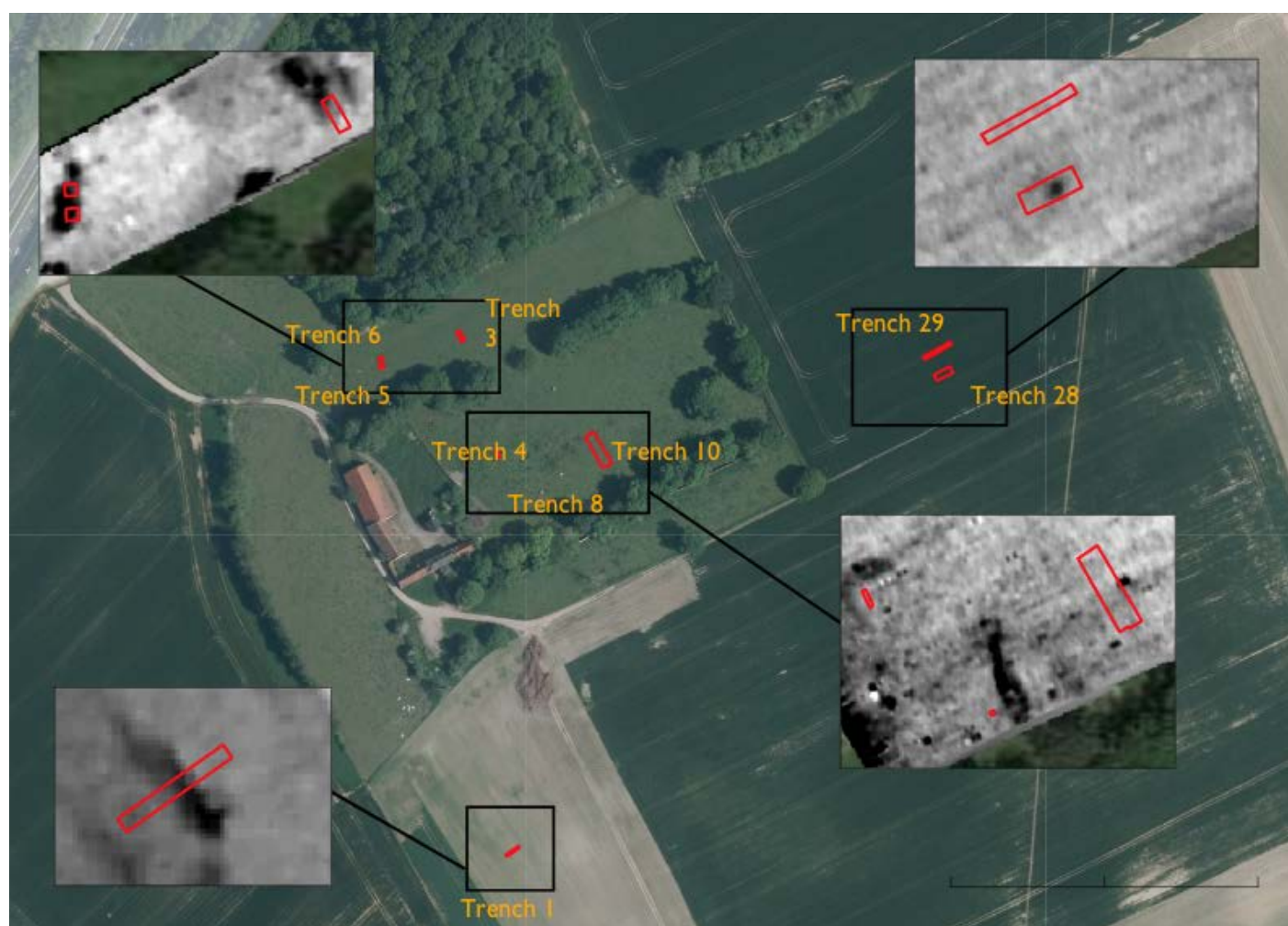
The d'Oultremont map, dated 1816.



The faint, geometric remnants of the formal garden layout, not visible to the naked eye (inferred lines, not verified as yet). Could they be that of the 1816 d'Oultremont map (top left)



Geophysical images created by Ghent University SMD – electrical variations (left), and magnetic susceptibility (right).



Trenches from the 2015-2016 field seasons that have yielded results – archaeological or otherwise!

Elsewhere across the areas surveyed, the geophysics has allowed us to identify 17th century brick kilns in the South Wood area (Trench 1) and in the Area to the North of Hougoumont (Trenches 3, 5 and 6). These all contain brick rubble similar to the bricks present in the Chateau, and thus possibly represent the kilns that were used to fire the bricks for the farm's construction. This is significant, not least in the possibilities it holds for adding knowledge to Hougoumont's history, but also importantly for the project: it has proved there to be a discrete *archaeological* layer which is preserved and survives untouched beneath the modern topsoil which gets churned every year through deep ploughing. This provides us with yet another clue of where, and how deep, we might need to look in order to find archaeology, both related to the battle or otherwise.

Of course, some of the geophysical 'anomalies' that we have detected have proven to be natural and modern features. For instance, there was a strong magnetic feature from within the formal garden complex of Hougoumont which turned out to be a small spot of heavily iron-rich natural soil caught in a pocket of silt. Another large linear feature crosses northeast-southwest

through the Great Orchard, which is no more than a modern pipe supplying services. In other cases we have identified burning events, so-called 'fire-pits', which have proven to be a result of the avid re-enactment activity which the battlefield attracts. What this underlines, is the importance of working back-and-forth from the geophysics to the excavation to enhance our understanding of what was, and what is still, present in the Waterloo battlefield, thereby allowing us to construct a robust scientific dataset.

WHAT NEXT?

So far we have surveyed just a fraction of the areas around Hougoumont Farm itself for the Waterloo Uncovered project. However this has given us a good grasp of what the potential for the area is to date – a landscape littered with geophysical anomalies, ripe for excavation. Our aim is to continue this survey work across the landscape; a very large assignment lies in unravelling the palimpsest, discerning what is recent influence, natural intrusion, and what is related to the battle—or harbours information that might be able to tell us more about the battle. ■



Brick Kiln found in trench 1.



Brick Kiln found in trench 3.



Brick Kiln found in trench 5.



Re-enactor fire-pit found in Trench 8.



About the author:

Philippe De Smedt is a post-doctoral research fellow at Ghent University (Belgium). As an archaeologist with a Ph.D. in Bioscience Engineering, he conducts interdisciplinary research on the implementation of geophysics and soil magnetism to address archaeological research questions. His current archaeological research focusses on the landscape archaeology of the Stonehenge-Avebury site complex, alongside the implementation of geophysical methods in preventive archaeology.

STORIES

VETERAN

SEAN DOUGLAS VETERAN, DIG 2015 & 2016

1st Battalion Coldstream Guards, 2012-2015.

I am a veteran who served with the 1st Battalion Coldstream Guards. After suffering an injury to my left arm whilst serving in Afghanistan in 2014, I was given a medical discharge from the military. Speaking with my Medical Officer and then Company Commander (Major Charles Foinette) I was offered the opportunity to join the Waterloo Uncovered team on their first dig in April 2015. I have since been involved on all digs to date.

My first dig was a learning experience into the world of archaeology, including surveying, excavating and metal detecting. Additionally the experience gave me the opportunity to interact and enjoy the company of other soldiers and veterans. Really, what made my experience on the project was not only learning about the battle and how it was fought compared to modern warfare, but uncovering the truth, whilst remembering all those who fought for something greater than themselves. The project also brought new life to me as it was somewhere where other soldiers and veterans could be together; we all have that same like-minded mentality and humour. I have since made amazing friends and seen how the project has helped others in ways that could not be put into words.

Since being discharged in 2015 I was lost and had no direction, with an injury that was progressively getting worse. But with the massive support and joint help provided by Waterloo Uncovered and Help for Heroes, I have been given the opportunity of a life time—a full scholarship to study at University and hope to graduate with a BA Honours in Archaeology in 2019. ■



Guardsman Sean Douglas



Sean finding his first musket balls in 2015

MERLIJN VELTMAN

STUDENT, DIG 2015

Merlijn is a Dutch student, who studied at University College Roosevelt in the Netherlands in 2015. He tells us here of his experience excavating alongside archaeologists and veterans on the dig...

As a student of UCR, I was involved in the first full-on dig of the Waterloo Project in the summer of 2015. Currently, I am training to become a historian, with a research Masters in Ancient Studies at Utrecht University, so I have taken a slightly different path away from archaeology, although I continue to use it in my research all the time! During my bachelor at the University College Roosevelt, in Middelburg, my university tutor informed me about Waterloo Uncovered. Right away, the project sounded incredible: digging into the historical crust around the site of the Waterloo battle to uncover what exactly happened more than 200 years ago.



As a student, it was my prerogative to learn as much as possible, and so my time on the dig was focused on a myriad of activities, ranging from the hard work of slamming a mattock into the thick slabs of turf and grass, to collecting finds that were spotted through metal detecting and recording the find spots to create a digital map of the battlefield. The amount of musket balls found was astonishing, especially considering the excessive amateur metal detecting that had already taken place before the dig. Together with Stu, I looked at the different positioning of the musket balls on the digital map, to illuminate the movement of troops during the battle. The latter was especially interesting, and really is making me consider doing another Masters, in part focusing on Digital Archaeology after this research Master. That is definitely one of the things that stuck with me due to the Waterloo Uncovered project: the desire to practice archaeology.

One of the most important aspects of the project was the rehabilitation of veterans, by training them in archaeology and letting them participate in the project. With many of the veterans from the Coldstream Guards, the regiment that fought specifically at the site of Hougoumont, their interest in the project and the archaeology was refreshing and admirable. I found it illuminating to work alongside these men, particularly because they understood the dynamism and the chaotic nature of battle – the one thing we were (and are still) trying to elucidate through archaeology. I learned a great deal about veterans and the story of soldiering over the two hundred years since the battle during my time on the team at Waterloo.

All in all, the project was a once-in-a-lifetime opportunity, from which I learned an incredible amount of awesome and fascinating things, and through which I also understood better the human side of conflict and battles. It makes one realise that many of the experiences soldiers have today can reflect back and illuminate the experiences of soldiers through the aeons of time. It also shows that archaeology, as the physical and fascinating subject it can be, is perfect work for veterans. I hope, therefore, that the project will have a long life, and will continue to aid veterans in their recovery and illuminate that one, frightful and chaotic day on the 18th of June 1815. ■



Merlijn digging alongside serving Guardsmen and veterans, in the walled gardens of Hougoumont.

ARCHAEOLOGY, CAMARADERIE, RECOVERY

Mark Evans, CEO of Waterloo Uncovered, outlines the Waterloo Uncovered project's development, its charity mission and how it helps our serving personnel and veterans on their road to recovery.

At the core of Waterloo Uncovered (WU) are the serving personnel and veterans (SPV) who form such an integral part of the team. SPV are offered a unique opportunity to take part in excavating one of the world's most famous battlefields. At the same time, they are offered support and encouragement with their well-being, recovery (from both mental and physical injury), education, personal development, and assistance with the inevitable (although not always planned) transition from military to civilian life. Because of the support and benefits on offer, the SPV can add great value to the project. For example, their real-life experiences of the military and exposure to conflict can provide valuable insights which aid the interpretation of the archaeological finds and help us towards a better understanding of the Battle of Waterloo and those who fought in it.

DEVELOPMENT

In the beginning

Waterloo Uncovered founders Mark Evans and Charlie Foinette studied archaeology together at The Institute of Archaeology, University College London. Completing their MAs in Museum Studies and Public Archaeology respectively, they both changed tack and joined the British Army as officers in the Coldstream Guards. Early in their military careers, they both spotted the potential for archaeology to benefit the Army, not only by uncovering new and important finds about regiments and battles, but as a means of educating its soldiers.

An idea germinates

All soldiers are required to learn about the wider military; particularly about their regimental history. This is most commonly achieved via lessons and lectures from historians, battlefield guides and even enthusiastic officers. It is a method that meets with mixed success; not least because most soldiers would rather be outside than in a classroom. They prefer learning by 'doing' rather than being lectured to.

Mark and Charlie talked about how archaeology – especially conflict archaeology – would be a great way to get around this. It was engaging, 'outdoorsy' and contained an element of adventure. Its physical nature would appeal to their soldiers and, with other activities from photography to surveying and book or internet-based research, archaeology could mesh neatly with the wide range of people, interests and skills you find in the military. However, the demands of the day job would mean they never had the chance to put their ideas into practice while they were both still serving.

"Time Team moment"

Fast forward to 2010 and Mark had to leave the Army after being diagnosed with Post Traumatic Stress Disorder (PTSD). During his



2015: in the bicentenary year of the battle, serving personnel and veterans learn archaeology in the formal garden of Hougoumont.

recovery, he saw an episode of the popular Channel 4 show *Time Team* about an archaeology project being run to support soldiers, like himself, who had returned from Afghanistan injured. Mark got in touch with the organisation, Operation NIGHTINGALE, and its founders, Sgt Diarmaid Walshe and a Ministry of Defence (MOD) senior archaeologist, Richard Osgood. Mark wanted to get involved. This was an opportunity to combine the two great passions of his life with his newfound desire to give something back and help other veterans who had been similarly affected by war.

The Bicentenary looms

Meanwhile, in 2014, Charlie was asked to organise a battlefield tour for some 250 soldiers from 1st Battalion Coldstream Guards, as part of their commemoration of the bicentenary the following summer. The tour was to last several days and, whilst planning and undertaking recce visits, Charlie finally saw an opportunity for the culmination of over a decade's worth of ideas and discussion about how to bring archaeology and the military together. He called Mark and the seeds of Waterloo Uncovered were sown.

The plan takes shape

The plan they developed was both simple and robust; run a commemorative dig at the battlefield of Waterloo that would engage serving soldiers and injured veterans in producing world-class, academic-standard archaeology.

The dig would take place in April 2015 and the excavation would be focused on Hougoumont Farm, site of one of the most pivotal and most famous military engagements in the Coldstream Guards' history. According to Coldstream Guards' legend, this was the turning point in the battle that ensured Wellington's victory. It seemed a fitting tribute to bridge the history of the regiment

across the 200-year timespan by connecting the men who had served then with the men who served now.

They knew they needed to keep the costs low and find the right people to help them—from medics to archaeologists and everything in between. They needed talented, professional people who were willing to give freely of their time and expertise to help the dig become a reality. Luckily, this proved easier than they had at first feared. Indeed, the enthusiasm the idea was met with from those they approached convinced them they were on to something special.

Some of the archaeologists brought on-board already had experience of community-based projects with a social interest, but few had worked with the military before and revelled in the unusual narrative afforded by bringing service personnel and veterans to investigate a battlefield. They were enthused, not only by this amazing opportunity to excavate at Waterloo, but also the chance to use archaeology to help others.

Once the archaeological and project teams were in place, they needed to find their participants: veterans and serving personnel who had the support of their regiments. The Coldstream Guards immediately saw the potential of the idea and promptly found—and funded—the attendance of four Guardsmen who had been medically downgraded (injured to the point of not being able to carry out normal duties). Two of them were looking to get fit again and go back to the job they loved, but the other two were facing a much less certain future. Their injuries meant they were going to be medically discharged. They found themselves on the brink of being civilians again a lot sooner than expected and, consequently, not in the best physical or mental state to move on.

In addition to these four serving Guardsmen, Mark and Charlie recruited a small number of veterans, largely through word-of-mouth. It transpired that some of them had archaeological experience already either as professional archaeologists, students, or through Operation NIGHTINGALE.

The first WU

So, in April 2015, a team of 30 (consisting of 11 SPV, 15 archaeologists and 4 volunteer supporting staff) set off to Belgium by minibus. The trip was a success on all fronts. There were enough archaeological discoveries made to warrant (demand) another trip later that year, and enough enthusiasm, collaboration and support to make it possible.

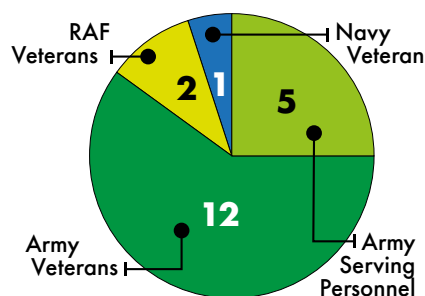
Through a variety of interviews and questionnaires, using measures such as the Warwick-Edinburgh Mental Well-being Scale (WEMWBS) and the ICEpop CAPability measure for Adults (ICECAP) test, the positive effect it had on our SPV was properly measured and recorded. Of the four Guardsmen, two went back to soldiering quicker than expected and with notable boosts to their morale. For the two Guardsmen who were medically discharged, one is now studying undergraduate archaeology at Winchester University.

The summer excavations

With 'proof of concept', a decision was made to go back in the summer of 2015 with a bigger team. Mark and Charlie wanted to expand the scope for SPV support, to learn from our experiences and produce the best programme and outcome results possible.

SUMMER EXCAVATION 2016

For its two week duration, this dig involved 15 veterans and 5 serving soldiers, with ages ranging from 21 to 72, and from all three services (see below for details). All of them said they had learnt something new; about Waterloo, about themselves, and archaeological and transferable skills. They all would recommend the trip to other Serving Personnel and Veterans.

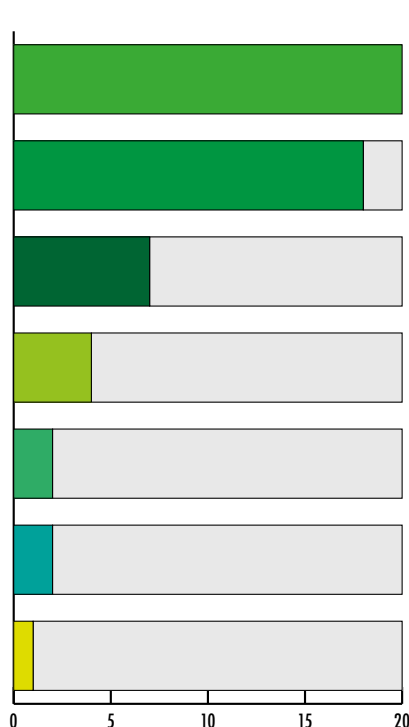


100% of the SPV from the 2016 summer excavation described WU as "inspirational", and 80% as "life-changing". 100% found the work "adventurous" or "challenging" (physically and/or mentally)



In 2015 the team comes down from their visit to the Lion Mound.

OF 20 SPV IN JULY 2016



20 described participation as a positive experience (as recorded using University of Birmingham's ICECAP-A measuring system)

18 recorded a noticeable positive mood change during the 2 weeks. Over 60% of those have recorded a noticeable lasting positive mood change they attribute to WU, measured at 3 to 4 months post-trip.

7 veterans are (realistically) looking to pursue archaeology as a career, hobby or academic study.

4 veterans continue to be involved in the project—one assisting with admin, one with finds, one with research and archive work and one as CEO.

2 of the participants were also with us in 2015 and were brought back in roles of greater responsibility to enhance their understanding of archaeology and career/educational development.

2 have started archaeology degrees at Winchester University this September organised in conjunction with Help for Heroes. Another is considering a History degree at York.

1 veteran will be going to Southampton University for an Archaeology MA, inspired to do this by his time with WU.

We looked to friends and experts in veteran's organisations such as Help for Heroes, Combat Stress and Walking With The Wounded to help us develop and expand. A real boon came when the Army Recovery Capability (ARC), the MOD-led initiative with responsibility for helping serving soldiers recover, awarded WU activities with "duty status". We were now officially recognised as an accredited Army activity.

As a result, in the July of 2015 and 2016, WU returned with two more groups to dig at Waterloo (teams of 63 and 66 respectively, including a total of 44 SPV). Each trip has built on the next, in terms of the archaeology and the support offered to the SPV, and we continue to learn and expand with every excavation.

The range of outcomes experienced by our SPV varied according to the individual and what they had wanted to get out of the project. There were certainly several common factors we noticed, but the one universal factor the trip produced was the hardest to measure and define: a spark, ignited by an overriding positive experience and increase in self-esteem, that would help people go in the direction they wanted. An outline of the basic structure of the WU veteran experience follows.

THE PROGRAMME

Who we help and how we find them

Participants are not limited to those with physical or mental injuries but are chosen also on the basis of who would benefit most from inclusion, and who would contribute to a diverse and energetic group. We treat people as individuals: the programme is tailored towards their needs—whether those be recovery, transition, well-being, employment and education, and always with a wider focus on the group dynamic.

> Serving Personnel (SP). Defined as, and including, those currently employed by the Army, Navy and Air Force, in a regular (full-time), reservist (part-time), or training capacity (including the Officers Training Corps (OTC) and Cadet Force, although participation in WU is currently only available to those over 18 years of age). In the UK, there are currently just under 200,000 SP.

SP primarily come to the project via ARC referral and approaches to (or from) individual military units.

> Veterans. In 2015/16 veterans were actively recruited from the UK only. UK veterans are defined as those who have served in the British Armed Forces for at least one day (which would include a single day in training). There are currently around 2.6 million veterans out of a population of 63.6 million (approximately 4% of our population).

Veterans are recruited through established organisations such as Help for Heroes, Walking With The Wounded, The Royal British Legion and Regimental Associations. We also find veteran participants through word-of-mouth, online, and through individual applications, so as not to exclusively offer opportunities to those already under the care of a large organisation.

It is worth noting that other nations' definitions of 'veteran' differ. In the Netherlands, for instance, 'veteran' is defined as a person with Dutch nationality who served the Kingdom of the Netherlands under combat conditions. For the purpose of this document, we will use the UK definition for all participants.

Application and Selection.

A comprehensive selection process has been developed combining an online application form with a two-stage interview process. This is designed to ensure we select the right participants who can do the work and be the most likely to benefit from it. Understanding

their needs is key, as is their understanding of what the project aims are and what it offers them. Those selected continue to be supported and engaged by project staff all the way up to the day of the trip, to ensure they get the most from the experience.

Care is taken to inform unsuccessful candidates in an appropriate and considered fashion. They are encouraged and provided with information to apply to other (UK-based) archaeological excavations that cater for SPV. In certain cases, they are told about, and encouraged to contact, other charities and services that might be able to help with an individual's needs.

The Summer Excavation

Duration. Two weeks in the summer for 15 days and 14 nights (Saturday to Saturday, usually in July).

> **Travel.** UK participants travel as a group to Waterloo from London by minibus and ferry. They are responsible for getting to London themselves. Travelling as a group has proved to be an important shared bonding experience for SPV, archaeologists and students. Non-UK participants make their own way to Waterloo where they are quickly assimilated into the team.

> **Settling in.** The first Sunday of the project is set aside for administration and recovery from travelling. All members of the project attend group briefings that cover everything from project ethos and behaviour, to daily routine and an overview of the Waterloo campaign. The day ends with a short battlefield tour and an evening meal; by this time, the group is more or less complete, including students, local archaeologists and volunteers, and foreign veterans. The briefings and evening meal provide everyone a chance to introduce themselves to one another.

> **Training and excavation.** On the Monday morning a proper introduction to archaeology takes place, with equipment issue, health and safety briefings and then more detailed introductions, by group supervisors, to the techniques and procedures that participants will use. After lunchtime everyone will be doing real archaeology and 'digging' with enthusiasm.

For the next ten working days, activity centres around the excavation at Hougoumont farm where, from 0830 to 1800, participants are treated as 'archaeologists'. They work in small



The X factor : participants from different walks of life coming together to share experiences.

teams and conduct a variety of tasks that include: digging, recording, finds-processing, surveying and photography.

> **Supervision and Welfare.** Each activity is carried out under the supervision of experienced archaeologists and allied professionals in a manner that best suits the participants' needs and abilities. One-on-one care is available as and when necessary. Working in this way provides participants with opportunities to learn new skills whilst being part of a team. The fact that their work is of public and academic interest adds an additional layer of purpose, engagement and pride. Participant welfare is managed by a dedicated welfare officer with 30 years' military mental health/medical experience and training, who is available 24 hours a day for those who need it.

> **Accommodation.** Participants are accommodated off-site in a comfortable 3* hotel with all necessary facilities. They eat breakfast and evening meals together, and in the evening have a range of activities available –from lectures, to watching films, to using the swimming pool, or going into town. Many, however, simply choose to "get their heads down" after a hard day's work, which is great for those who have had previous problems sleeping.

> **Feeding** is an important group activity, with breakfasts and evening meals taken at the hotel and lunches (a baguette with salad meat and cheese) devoured onsite. Helping prepare and serve lunches is a task all participants take turns in, as is making and taking around those all-important morning and afternoon brews.

> **Discipline.** Throughout the trip participants are treated as adults, with a strict 'two-strikes' policy to manage any potential for unwelcome behaviour.

> **Weekend rest days.** The working weeks are divided by a full weekend for rest and recuperation, or cultural visits for those who are up to it. In each of the first two years, these activities have included visits to Brussels guided by Belgian archaeologist team members, and visits to WW1 battlefields and the Waterloo battlefield and museums—again guided by project participants.

BUILDING A TEAM: THE 'X' FACTOR.

One of the key factors to the success of WU is the diversity and make-up of the team. WU is a project that has military participants but a non-military feel. The core excavation team (those on site



On the Monday morning, a round robin with supervisors introduces participants to different archaeological techniques and procedures.

OF 5 SERVING SOLDIERS IN 2016

2 injured prior to WU and in the recovery process will re-join regular training and, according to their chain of command, both have shown notable increases in motivation that they attribute to participation in WU.

2 are in the process of Medical Discharge. Both agree WU has opened their eyes to possible futures outside the military. One is very seriously considering applying to start a History degree.

every day) consists of approximately 50 people. This includes 20 SPV, 20 archaeologists and support staff and 10 students. Not all of them are British and up to a third of the team are female.

We aim to create a careful mix of people, some with similar and some from more diverse backgrounds. This gives us a rare mix of a wide spectrum of contributors. There is something special about a diverse group of people coming together to share aims, experiences and achievements. This can be of benefit to those SPV who may have spent more time in a less diverse environment. Some examples of this diversity are given below:

> **SPV.** Although part of the same career/life cycle (a soldier, sailor or airman/woman will eventually become a veteran), serving personnel and veterans find far less time and occasion to mix with each other than you would imagine. Soldiers are busy on operations, and veterans must adjust to restricted access to the military world. Providing an opportunity for the two groups to meet can help them share information and experiences that both groups can benefit from. SP get a chance to see what future life might look like (good and not-so-good) and the veterans get to see something of the life they left behind, and maybe a glimpse of the person they used to be (again, for better or worse).

> **Ages.** We have had participants as young as 18 and as old as 72 and, as with the SPV, they all have something they can teach each other: people of different ages come with different life and military experiences. It is also more like civilian life so helps with transition.

> **Genders.** As with age, the civilian world can prove more varied than the military to date. It is generally fair to say that SP (and veterans) have less experience of gender-balanced working environments than their peers. We work hard to recruit as many female participants as possible. Where we can't make up numbers amongst the veterans we try and do so with the archaeologists and students.

> **Nationalities.** It is our privilege that working on such a famous European battlefield also involves international cooperation. Having a spread of nationalities is as important to interpreting the archaeology as it is to understanding civilian life and the multicultural world we live in. Exposure to people from different nations can only be a good thing and often shows how experiences, problems and solutions, and friendships can transcend language and geographical borders. Importantly, for many of our veterans, the excavation can be another extension of the alliances in which many have served throughout their lives in uniform: recognising that allies carried away much the same experiences (and, often, problems) from their service can sometimes be cathartic.

> **The Services.** The Royal Navy, Army and Royal Air Force are an integral part of the military family and remain an integral part of the project.

> **Rank and Experience.** Again, a mix of these provides a degree of diversity. It is important to recognise that not every veteran fought in Afghanistan and that any/all service is valid. Those who may not have fought in active wars still served and were still prepared to do so; and those who saw conflicts such as Northern Ireland and Bosnia will have suffered injury and seen things that will remain with them for the rest of their lives—no matter what their rank was.

> **Archaeologists and Students.** WU experience suggests that serving personnel and veterans benefit from being enough in number to feel the project is "military", but still an overall minority—so the trip is in effect "civilian". This also provides the correct levels of support in areas such as welfare, command and control, and professional archaeology.

To date, recruiting archaeology and volunteer participants has been primarily through word-of-mouth, with applications needing the support of an established project member. They don't have to know, or have worked with each other previously, but the project member will have considered and assessed their suitability to work with this unique team. There are qualifications and courses available to help support work with SPV. WU has run several of these courses for its archaeologists, but it is not a prerequisite.

A similar principle applies to the students. These volunteers are formally recruited through Professor Tony Pollard at University of Glasgow, Tim Schadla-Hall at UCL (a WU Trustee) and Vicki Haverkate at University College Roosevelt (UCR) in the Netherlands. The relationship we have developed with UCR is very important in helping us secure Dutch participants on the trip.

> **Range of Injuries/Abilities.** Some are psychological, some are physical, often both are present. Some may be the direct result of enemy action, others from accidents, illness or circumstance – we try not to impose any 'value' judgment on the cause of illness or injury, but rather to recognise that we are all part of the same community. We are open to all, but make sure the overall mix of participants allows individuals to get the support they require and something positive out of the project. We have a 'can-do' attitude but don't take unnecessary risks: we would rather disappoint an applicant than ignore advice and set back their recovery.

SPV BENEFITS

The WU programme is non-clinical, but over the course of its first two years has measured and recorded the following benefits to our SPV:



For some, the excavation is a chance to forget injury, and build confidence in a sympathetic environment.



The X factor: participants from different walks of life coming together to share experiences.

> Recover and soldier on. This is what the clear majority of injured soldiers want to do, rather than be Medically Discharged. The military is their chosen career and one they have worked hard to achieve, and they want to get back to it. The military, in turn, are very keen to see soldiers they have trained return to active service, and so invest a significant amount of time and resources in medical care and recovery. The mental/motivational aspect is key. Both Charlie and Mark could recall from their own experience, Guardsmen going through recovery, unable to participate in active service, and becoming dejected—some even spiralling into the depths of depression.

The idea of sending recovering soldiers on a project to boost their morale and keep them active whilst they recover is supported by the Coldstream Guards' medical personnel and commanders. The experience also offers a chance for personal development, by being exposed to several new circumstances and skills (found in civilian life) that could benefit them and their military careers. At the very worst, they have further experience that can be added to a CV to demonstrate wider employability at a later stage.

> Recovery for veterans, who need to “civvy-on”, not “soldier on”. The project might be a non-clinical environment but it has recorded success with participants with physical and mental concerns. Some sick or injured veterans benefit from contact with others who share their experiences, including serving personnel who ‘get’ them instinctively, and who can offer camaraderie without either detailed explanation or judgement – they can be ‘who’ not ‘what’. Others benefit from new directions, personal connections, the opportunity to learn something, or simply to get away for a while and ‘re-charge’

“From a chain of command perspective, Waterloo Uncovered allowed us to give soldiers a change of pace and a break from Windsor/Victoria Barracks. This is important as trying to get back to full fitness from injuries can have a big impact on an individual’s morale and motivation, and Waterloo Uncovered will have contributed towards the soldier’s overall recovery (both physical and mental).”

Company Commander Major O Biggs,
Coldstream Guards.

in a sympathetic environment. And some can offer back to others just as much as they get out of the project personally. The project has recorded similar benefits amongst veterans, with anecdotal evidence from families and friends, as well as from participants, suggesting that it has proved worthwhile.

> Transition is the military term for leaving and become a civilian. It is something that almost all serving personnel will go through and Mark had been through himself. Charlie had not, but knew plenty of others who had (officers and men) with varying degrees of success. With this in mind, they hoped to offer those who were in the process of leaving, an insight into civilian life, what it might offer, and what preparations might need to be made for it. Two of the soldiers on the first excavation fell into this category—currently still in the army but waiting to hear the inevitable result of a medical board and learn their discharge dates. While they were waiting, they were in limbo and certainly weren’t in any fit state (especially mentally) to prepare for the change. They were still being paid and emotionally clinging on to their last days in the Army and the security it provided. Their example proved that participating in the project can help bridge that gap.

> Ongoing transition. Leaving the Army is not always a straightforward process and its effects can last for years. The decision to leave may be taken out of a soldier’s hands; it is a life-changing one and is often heart-breaking. The change of circumstance and way of life can leave veterans, once part of a family/culture/structure, feeling isolated. People who once fitted in can suddenly, through no fault of their own, find it hard to adapt to the new ‘civilian’ environment they find themselves in. For some the experience might just be a clash of habits from their military career, for others it might be more traumatic and cause a feeling of bereavement / loss of identity. Being with WU is a chance to be back with “like-minded” people but in a non-military environment. It’s a safe space, that, though only temporary, can help people put their past and their future into perspective and build a sense of worth and confidence.

> Social inclusion and combating isolation. For many SPV who are injured or transitioning, isolation can become a very real and dangerous issue. It is unfortunately all-too-easy to hide away or be forgotten (especially if injured and restricted in what you can do). This social exclusion can lead to greater problems with health (physical and mental) and sense of well-being, and a feeling that there are few prospects for the future. Participation in WU can help stop this and, in many cases, start to reverse this process.

"It was an honour to be part of it all, I felt like part of a team and that it didn't matter that I have a disability. My wheelchair was never considered a problem.—It was my first time away alone since being in a chair. I nearly turned around at the station, but I'm so glad I went. I did struggle with being away from home but had a fantastic roomy, Emily, who helped me massively. As I have a physical and mental health injury, people don't always understand me, but at WU I felt so comfortable and learnt so much. It was just fantastic and was a life changing experience. And for that I really cannot thank WU enough."

Quote from a 2016 participant.

"It was really good to be with people alike and speak with other veterans about their injuries. Therapy-wise, it works."

Quote from a 2016 participant.

"Before coming over here I was hoping to get some experience in archaeology, but I got a lot more than that."

Quote from a 2016 participant.



In July 2016, Guardsmen happily dig in the Sunken Way.

> **Acceptance of others and by others.** This is an important condition for a happy life. Being accepted as part of the WU team with its diverse (yet familiar) members can offer a glimpse of how that might be possible in life beyond WU. It can also show and remind the participants that being tolerant themselves is a way forward and offers much reward.

> **Education opportunities** are available, both at a personal, and a scholarly level through the chance to work with academics and so experience and access the world of higher education.

> **Vocational opportunities** are also available, especially as some of the archaeologists are veterans themselves and are sympathetic to the unique difficulty of transitioning out of Service.

> **Personal development** is something that anyone can benefit from, serving or veteran, at any time of their life: it is a central tenet of WU.

> **General Well-being** (outdoors, active, etc.) is an important factor in recovery and well-being and might have been lacking in many people's lives. Time on WU can remind personnel of this and help make it an option for the future.

POST-EXCAVATION AND LONG-TERM SUPPORT

WU primarily exists to support SPV whilst on the excavation. The experience and responsibility however doesn't always end there, and there are several other ways WU supports and engages with SPV:

> **Community-Building** has been made easier with the development of social media, and WU uses Facebook to stay in touch with its participants and encourages them to stay in touch with each other whilst continuing to develop friendships and new-found interests in Waterloo, archaeology and history. For some this is a pathway to interactions they might otherwise not have had, or hadn't experienced for a long time.

> **Further Study of Waterloo** is encouraged and is a great way for SPV to continue their involvement with the project, and benefit from it.

> **Outreach and Engagement** are two of the project aims and it has been great to include SPV in them. WU has an annual presence at the Chalke Valley History Festival, and has taken SPV to give lectures (often alongside archaeologists) at clubs and societies across the country. It is not only great for the project to publicise itself and tell the public about its results, it is also often a huge achievement for the SPV involved to speak to an audience, and a very empowering experience to tell their stories.

"Prior to joining the project, I had become very withdrawn and had little contact with people other than my direct family and had little interest in anything that had been important to me before. After 2 weeks of being with veterans and serving soldiers I felt so much better. Working with archaeologists again gave me back my enthusiasm."

Quote from a 2016 participant.

> **Signposting** those who need help to the organisations who can provide it. Putting people in touch with the right help is vital as the SPV charity and support world is complicated and sadly, although options are available, SPV are not the greatest at asking for, or taking, help.

WIDER BENEFITS

> **Archaeologists, students and volunteers** taking part in the programme have reported many of the same benefits our veterans experience, including improvements in a sense of well-being, social inclusion, recovery, new learning and personal development. This is not entirely surprising, but very reassuring nonetheless.

Inspired by their contact with SPV, some have been motivated and encouraged to do more work with disadvantaged people. They have all taken something in the way of acceptance and goodwill back into their lives and jobs.

> **The Wider Public** learn about archaeology, history, the Battle of Waterloo and the issues that face our SPV. We anticipate that this may lead to wider social understanding and better integration of SPV in society.

Most importantly, WU is helping people better understand the consequences of war.

FUTURE AIMS AND DEVELOPMENT

We plan to work closely with the Veterans and Families Institute, Anglia Ruskin University, to conduct a study into the benefits WU and archaeology offer serving personnel and veterans. This study will not only influence the support and work at WU but should arm the wider Veteran support community with important information based on the study outcomes.

WU aims to include other nationalities' militaries and veterans in the programme, with our Dutch, French, Belgian and German allies being our priority. In particular we are building a strong relationship with the Dutch.

The project will continue to support 20 or more UK serving personnel and veterans a year with our fieldwork, and support and include more in research, outreach and post-excavation work.

Our goal is to deliver at least 5 years' more archaeological work at Waterloo that will contribute significantly to the understanding of the battle and support SPV in the process. ■

TOWARDS THE FUTURE

> **Further study** into long-term impact is being conducted (to include data from soldiers and veterans from 2015).

> **The welfare, support and selection process** used by WU has been developed in conjunction with the charities Walking With The Wounded, Help for Heroes, and Combat Stress.

> **An organic support network** / WU community has developed (largely through social media) that:

- Is keeping people informed about archaeology opportunities and helping them continue archaeology as a hobby, education or vocation.
- Has helped one veteran find a home after providing vital support when he became homeless.
- Has helped one veteran overcome his fears and take a train (any public transport) for the first time in years.
- Inspired one of the civilian metal detectorists to train other veterans and disabled people in metal-detecting in Scotland

Involvement in the charity has changed the way the archaeologists (and others) look and talk about soldiers and veterans and has changed the way they think about employing them.

The project has created friendships and formed links across Europe.



About the author:

Mark Evans studied archaeology at UCL before joining the Army in 2004. His subsequent career fostered a keen interest in the welfare and recovery of injured service personnel, whilst service in the Army's oldest regiment continued to inspire his love of history. Mark retired from the army in 2010 when he was diagnosed with PTSD. After his subsequent treatment and recovery, Mark founded Waterloo Uncovered together with Charlie Foinette in 2015 and is now the charity's CEO.

STORIES

ARCHAEOLOGIST

SAM WILSON

ARCHAEOLOGIST, DIGS 2015-2016

Sam is one of our trench supervisors. He is a Battlefield Archaeology specialist, and is currently completing a PhD at Huddersfield University on the Wars of the Roses battlefields. He tells us what it's like digging with veterans in the trenches...



Sam in the Killing Zone with some of his 2016 team: Sara (student) and John (veteran)

It's no exaggeration to say that having the opportunity to work at Waterloo has brought a boyhood dream to life. I've been fascinated by the battle and the Napoleonic period for as long as I can remember and it's definitely one of those sites that influenced my desire to work in Battlefield Archaeology. The discovery of artefacts that relate to a battle, and even a specific moment in time, is a thrill that never gets old, and the feeling of connection with those who were actually there is indescribable and unique. It's as close as you can get to time travel.

My role within Waterloo Uncovered is as a Trench Supervisor, which means I lead a small team of veterans and archaeologists and ensure we apply the appropriate excavation and recording strategies to extract all the necessary information we need from wherever our trench is placed. A key part of this is training those within the team, as for many it will be their absolute first experience of archaeology. This is, of course, a challenge, but incredibly rewarding. It's very satisfying to see a team able to fully complete their recording without any help from me by the end of the two weeks, progressing from having never even heard of Context Sheets on day one! Archaeology is a hugely collaborative process and it has become quite clear that archaeologists and veterans operate on similar levels of banter when working together! All of this, of course, makes the site a very enjoyable place to be.

Working with veterans is a great privilege; and to see the positive influence that the project has had on them is quite staggering in many cases. I consider myself very lucky to have some small involvement in that. One of my favourite moments from last year was when John, a Falklands veteran who lost an arm during the conflict, managed to put us all to shame with his digging stamina. Despite using two-handed tools with one hand, he dug all day without complaint and continued to do so simply because he hadn't been told to stop! I have to say there was a slight look of relief in his eyes from below his sweat-soaked brow when I informed him it was time to go back to the hotel at the end of the day!

My experience of working at Waterloo has helped me in a number of ways both professionally and personally, but what I really take away from the experience is the wonderful people I have met and the genuine and lasting friendships that are born there. It is a wonderful thing I think, that out of the carnage and misery of the battle, 202 years further down the line it has the power to bring people together and make such a positive impression on their lives. ■

JOHN PHILLIPS

VETERAN, DIG 2016

Corps of Royal Engineers, 1958-1989.



John working hard in the formal garden.



Whilst serving in Belgium in the early 1970's I visited the Waterloo battlefield several times and wondered what historical artefacts were beneath the surface. Little did I know that in 2016 I would get the wonderful opportunity to find out! I am a member of 'BLESMA; The Limbless Veterans', having lost an arm in the Falklands conflict. BLESMA were asked by Waterloo Uncovered if they had any veterans who might benefit from taking part in the 2016 dig at Waterloo. As I had retired and was wanting a new challenge, I applied to be considered, and after a brief selection process I was on the list to go. I was 73 at the time and wondered if I might be a little too old for such a strenuous activity. However, being a former Royal Engineer I knew I could dig, which was, in addition to my enthusiasm, the only skill I could offer.

On arrival at the hotel in Nivelles we were issued with protective clothing and briefed on the proposed programme. That evening was spent getting to know each other, including the professional archaeologists who were to be our mentors on site. What a great bunch of people! All ages, nationalities, students, detectorists, serving and ex-serving veterans, all bonding together with the common aim of increasing the knowledge of what happened during the battle for Hougoumont Farm.

The daily routine was to be on site by 0900 hrs, have a short task briefing, and then carry out the archaeological excavation. I cannot tell you what a thrill it was for me to find a musket ball within the first hour. To realise that it had last been seen and handled by an infantryman of Napoleon's Army more than 200 years before—I was 'hooked'! The days were tiring but it was good for a retiree to get back into a daily working routine and to experience again the banter and humour associated with service life.

Halfway through the dig, the 'Reading to Remember' fundraising event was undertaken in the Hougoumont Farm Chapel. This took the form of a relay reading of accounts of the battle, for 11 hours, the duration of the actual battle. I read a section from the book by Bernard Cornwell, 'Waterloo: The History of Four Days, Three Armies and Three Battles', an extract which included a first hand account of the evacuation of the wounded from the battlefield. I found this very emotional and difficult to get through as it reflected, in some part, my experience of being wounded, evacuated and cared for in 1982.

The two weeks seemed to fly by and we were on our way home. I will always remember the experience and the fellowship that was created during the two weeks' digging on such historic ground. I will forever be grateful to Waterloo Uncovered for the opportunity to participate in such an adventure, and hopefully will remain in touch with those who took part in the 2016 dig. A wonderful experience, which I highly recommend. ■

STORIES

VOLUNTEER

OLIVIER VAN DEN BERGH METAL DETECTORIST, DIG 2015 & 2016



The 2016 team of detectorists. Left to right: Gary Craig, Hans Marxen, Marc-Patrick Conaghan, and Olivier Van den Bergh



I am local native Belgian; in fact Flemish, but living just over the language border. The first thing I heard about Waterloo Uncovered was in spring 2015 on the 7 o'clock news. Every French-speaking and Dutch-speaking TV-news channel was reporting about an archaeological excavation on the battlefield taking place over the coming years. The very next day I jumped in my car and set off to Hougoumont. I asked for the archaeologist in charge and met for the first time Tony Pollard. It was only after watching National Geographic, that I realised it was the same guy I met at Hougoumont, two weeks before !

I'm self-employed, working in urban vertical farming systems after having worked at a multi-national foodservice company as sales and account manager for more than 20 years. My role on the dig is as part of the metal detectorist team, working alongside other enthusiasts to survey the buried metal artefacts for the excavation. Metal detecting was my hobby, before I got involved in the dig. What do I mean by 'hobby'...? Strolling over a field and hoping to 'catch' something! WU is different, there you go for accuracy, covering line after line with my team members, sometimes over hundreds of square metres. So far on the project we have produced some great results surveying large areas like the Great Orchard, and working alongside archaeologists digging in their small-scale excavation areas, like in the Killing Zone. The big difference compared with archaeological digs I've already participated on, is that at WU the order of march is: 'detect, dig out and label it!'. This is the perfect approach to empower and motivate people.

It is not often that detectorists work together, let alone with archaeologists, and at WU it's a big team. A big team must be managed. Like in the army, you have to be prepared to follow the orders of the day and fit with in the 'Plan de Campagne', as French officers would have said during Napoleonic campaigns. You have pleasant missions and challenging missions; the fields surrounding the farm compounds can be very physically demanding especially. But at WU, the symbiosis between the world of archaeology and metal detecting always works, due to the mutual respect between individuals and the greater aims of the project. The benefits of such a collaboration are not always appreciated, and hopefully Waterloo Uncovered is helping to demonstrate how successful embedding metal detecting alongside archaeology can be.

Working alongside veterans is perhaps the most rewarding part of the project, working with people and seeing them flourish into Indiana Jones after a few days. Not all veterans are – unfortunately – able to detect, due to physical or other injuries. Metal detecting is also not something that you can perform very well in just a few hours, you need some practice and experience to understand your detector, which can differ greatly according to brand or model. However, we try to give them as much information as possible and get the veterans involved in practising if they want to.

I am grateful to be involved in WU, as it is not only an international project, but also a once-in-a-lifetime opportunity to dig and detect on a battlefield that reshaped modern Europe as we know it. ■

PHIL HARDING, FSA

ARCHAEOLOGIST, DIGS 2015-2016

Phil is a professional archaeologist, and a well known face on Channel 4's 'Time Team'! He joins us on the dig to whip our veterans into shape, and get them inducted into the world of archaeology.



Phil with part of his 2016 team. They quickly found him to be a great teacher and intransigent supervisor.



I became involved with Waterloo Uncovered when details were circulated to members of the Defence Archaeology Group, of which I am President, and which helps use archaeology to provide military personnel with help for those who need it. I felt it was time to contribute something practical in addition to my presidential role. The first year I attended Waterloo Uncovered I got on well with everyone, liked what I saw and was pleased to be invited back for a second year. I must have been doing something right!

At Waterloo Uncovered I act as a Trench Supervisor. This requires me to look after the archaeology, as I would in my normal life as an archaeologist, but also to act as a tutor. I remain a firm believer that your first dig is the most important dig you will ever undertake and that the tuition provided will shape the way in which you excavate from that point onwards. It is essential that each step is explained carefully, not only the 'how to' but also the 'why'; if this is undertaken correctly it reflects on the quality of the excavation, the accuracy of the results and the pride of the work force. It is clearly understood that it is 'our trench' and we all share pride in its appearance and the way in which it is done. I firmly believe that these concepts are those that are also found in military groups. Explaining what we have found, why it's important and what we intend to achieve subsequently is also a vital tool of motivation. As in all archaeology, doing it with a smile on your face is essential.

Digging at Waterloo Uncovered is a unique experience. As an archaeologist the opportunity to excavate and produce archaeological results at the site of one of the most important events of the 19th century is a privilege. To do this with military personnel, who have infinitely more combat experience than I shall ever acquire, and to provide them with some respite, recovery and change adds to that satisfaction. In many ways I remain an outsider, a lifetime archaeologist among a group of professional military personnel, people who share experience, humour and camaraderie. It is truly humbling to think that something that has been so important to me, archaeology, can also provide some help to those who need it.

Digging with veterans at Waterloo Uncovered posed no real doubts for me; I'd witnessed the use of troops at an Anglo Saxon cemetery site in Wiltshire, knew that it would work and approached Waterloo with confidence. There is still much that I do not understand about the way of military life, PTSD or related forms of injury, but I'm also learning, and that is the important thing. Perhaps retaining some form of ignorance is beneficial; it helps to concentrate my mind and effort on the archaeological results of the project, with the hope that I can make the experience memorable for all our participants. ■

THE FINDS OF WATERLOO UNCOVERED



A portion of the finds excavated in 2016.



20th century horse harness.

Over the two years that we have been digging at Hougoumont, our Finds Team have been processing the great number of artefacts recovered from the field every day. To date we have cleaned, dried, made initial identifications, photographed and catalogued descriptions of around 2500 objects. This massive amount of work has been achieved strictly within the two-week period on site—no mean feat for the team, when one day might see 200 finds through the door.

Waterloo Uncovered is a project with a difference when it comes to our approach to archaeological artefacts, having already geolocated many of the artefacts found on site into our Archaeological Recording Kit (ARK), open access database. This technology is pioneered by L - P : Archaeology and is available at www.lparchaeology.com/waterloouncovered. Through this website anyone is able to see the latest information on any of the finds recovered to date from the dig. They can inspect the location of an artefact on a zoomable map and overlay historic maps of

the battlefield, and most importantly, download this data for their own research uses (adding to the heat on the Finds Team, as their work is immediately 'live' for anyone who wants it!).

The finds at Waterloo Uncovered are wide-ranging and date from all periods, not just the time of the battle (the Chateau of Hougoumont can be traced back to the Medieval period). The artefacts we have recovered so far include pottery, building materials, animal bone, metal, glass, leather and fabric objects, dress ornaments, coins and of course hundreds of musketballs.

The question which usually gets asked of the Finds Team is 'what do you do with all the stuff?'. Once all the fieldwork is complete, the finds are sent on to archaeological specialists and scientists to undergo further and more complex analyses, including exact dating provenance, stylistic features, use, material components; much more than can be offered on site. This data then adds further refinement to our knowledge and overall interpretation of the site.

Waterloo Uncovered is perhaps more unusual than other field projects, in that we have only a two-week window each year to collect data without interrupting the running of Hougoumont as a working heritage site and farm. Our investigations therefore have had to be very targeted, but it also has meant that we have only just (after three field seasons) harvested 'complete' artefact datasets from certain areas, and are therefore arriving at the stage where we can start in-depth post-excavation work on the finds. Our finds are currently being stored at L - P : Archaeology's Processing Unit, and are being prepared to be sent on to specialists around the world.

This article seeks to describe just a few of the types of artefacts we're uncovering from the site (both the exciting ones and the head scratchers!) and offers some provisional insights.

THE HOLY GRAIL...

The 'holy grail' in archaeology often doesn't lie with the one-off superstar artefacts you see in the news, but rather more with the more mundane and everyday items; collections of artefacts that



The late Cpl. Scott Hawkes helps register the finds room of the 2015 excavation.

tell a story. Finding an 'assemblage' of artefacts can reveal much about the history and significance of a particular area on site, and at Waterloo Uncovered, we're in pursuit of assemblages which might be able to reveal significant new knowledge about the battle. This might be artefacts which demonstrate encampments and bivouacs where preparations were made, where tensions were high and food and drink were consumed before the battle. Others might be able to reveal how particular troops were stationed or how communications were operated throughout the day, or the aftermath of the battle.

Our targeted trenches have yet to throw up any very concentrated artefact-rich deposits, as we might have expected, for instance, in the Sunken Way or within the formal garden, though really our investigations have only just scratched the surface of the potential at Hougoumont. What we have obtained however, is a large dataset of hundreds of artefacts dispersed across a wide area. Through the metal detecting survey of a wide area we've uncovered hundreds of pieces of lead shot – those from muskets, pistols, rifles and cannons, and if you haven't already read it, flick back to Tony's article (page 9) or forward to Emile's article (page 40) on the types of research being generated through these artefacts. All these types of shot have distinctive signatures, with close-range pistol balls being the smallest, and canister or grapeshot being the largest. The latter were particularly vicious, with several balls packed into a can or sack (resembling grapes when packed), and fired from cannons to splay out, taking out several men and horses in one deadly blow. The injuries that could be inflicted by these types of weapon were as savage as any injuries by modern armaments. Charles Bell, the Scottish surgeon brought from London to treat the wounded in Waterloo, famously documented the horrible legacies of these clumps of lead, by painting a series of vivid water colours. A grapeshot wound is pictured below.

WEAPONS AND KIT

This metal detecting effort has also produced artefacts relating to the muskets, such as ignition flints (one particular from the Killing Zone BA15HOU_931 still in its lead sheath), as well as fittings that have broken off from the end of the stock. Experimental research by the University of Glasgow's Centre for Battlefield Archaeology department (who stake a claim as the only 'armed' university department in the world!), have identified such broken-off fittings to be symptomatic of muskets not being used as firearms, but instead in hand-to-hand fighting as clubs.



Grapeshot wound to the neck, James Alexander, 1836. Watercolour by Charles Bell.



The drum hanger - BA16HOU_948

Other martial artefacts we have found to date have come, not from the weapons, but the soldiers themselves. Napoleonic era uniforms were ablaze with colour and a host of decorative sartorial elements, a world away from that of the standard issue of the more camouflaged modern era. Pictured above is a beautifully ornate drum hanger fitting (BA16HOU_948). Drummers were among the first to be sent into the battle (and often the first to fall), hammering the beat of the march, communicating signals and inciting fear into the enemy. Indeed when discovered, this piece incited much excitement amongst our own 'troops', with many fanciful theories connecting it to the infamous drummer boy who was 'spared' when the Napoleonic troops briefly broke into the Hougoumont complex. Decorated with a 'George and the Dragon' motif however, the theories were short lived! More robustly, another decorative item, a pewter French Eagle from a cartridge case, was found in a 'rubble' layer near to the garden wall in the Killing Zone (BA16HOU_1). Could this have fallen from a French infantryman as he struggled in vain to scale the chateau walls?

The mainstay of the soldier's kit however consisted of more simple functional elements: the knapsack (containing things like spare shoes or clothing, any personal items, or pipe-clay), the haversack (a simple fabric bag used to carry rations), a canteen for water and a mess tin, and a leather cartouche box for carrying gunpowder cartridges. To have lost any of these pieces during the heat of battle would have constituted a serious blow for the average soldier, and for this reason kit was strapped tight to the body. Our investigations have found several musket brushes and prickers – used to clean the musket of fouled gunpowder during battle. These implements would have had to have been used perhaps after every three discharges in order to ensure the musket continued to function, and were hung from a chain fastened to the jacket for easy access. It is artefacts such as these that are so vivid to find on the battlefield, for both our veterans and archaeologists. Imagine a mounted French cuirassier charging towards you, sabre in hand, whilst you struggle to clean and reload a musket. Imagine the stress of just making it in time.

Starker evidence comes also from some of our other artefacts. Later in this publication Emile explores how particular deformations and markings on lead shot can tell stories of those who fired them (page 40). Many of our musket balls have 'ramrod' markings on them, where the ramrod (used to load the shot into the base of the bore) has dented the face of the musket. What is remarkable about some pieces at Waterloo however, is the strength of some of the ramrod marks found; extraordinarily severe dents caused by over-ramming of the ball, which speak to the fear and stress that these soldiers must have been operating under on the battlefield.

Finally we end here, perhaps peculiarly, with a delicate lady's brooch, showing Napoleon's head with two flags, appearing to have been enamelled. Women were present behind the lines, who followed the army to the battlefield; and there is also evidence that some fought in disguise. One possible hypothesis for the brooch that can be put forward might be that it belonged to the Lady of the house (possibly the wife of Antoine Dumonceau who was managing the estate in this period) when the farm was garrisoned after the revolution, and allied with Napoleon. Or perhaps, consistent with our knowledge of love letters on the battlefield, it was carried into battle by a Napoleonic soldier as a token from a loved one waiting back in France, for protection.

WHAT NEXT?

As mentioned at the start of this article, the end of the dig is just the start of the journey for our finds. Now we are starting to get 'complete' datasets for certain areas, our finds will be sent for specialist analysis.

One aspect, which is problematic on the dig when it comes to identifying finds, is the popularity of the battlefield for reenactments of the battles. Every weekend the site is populated by enthusiasts dressed in contemporary clothing, who also end up inadvertently dropping pieces of their kit on the battlefield. Many of the artefacts we recover are of reenactment provenance, and much of our scientific analyses will be directed at disambiguating the 'authentic' finds. We intend for our buttons (of which a large number have been rapidly assessed as reenactment), to be analysed for authentic or modern pewter content. Our bricks and pottery will be sent to specialists for typological dating, and vessels to laboratories for trace element analysis to determine what sort of substances were being held inside.

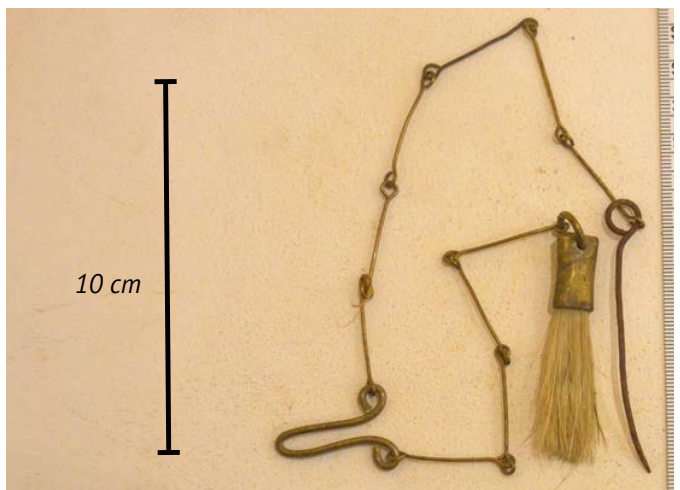
Perhaps the most exciting potential for our finds comes with a new partnership with the Institut Laue-Langevin, Centre for Neutron Science in France, working with the Head of Neutron Distribution & Mechanics, Jérôme Beaucour. Jérôme has worked with incredible Napoleonic datasets from the Berezina battlefield in Belarus, a site which saw conflict between the French and the Russian army in 1812, after Napoleon's failed invasion attempt of Russia. Using non-destructive neutron techniques (neutron tomography, x-ray tomography, neutron diffraction strain scanning, neutron activation analysis and prompt gamma activation analysis... to be exact!), the centre has been able to reveal new knowledge regarding some of the Berezina artefacts, such as hidden details in a cast eagle's talon (thought to be a part of a decorative eagle of the French flag staffs, recovered from a location where the Imperial Guard bivouacked during the battle). This analysis revealed the internal screws which form the eagle's construction, which otherwise would not have been perceivable unless taking the artefact apart. The Waterloo Uncovered artefact datasets contain many unidentifiable lumps of corroded and mineralised metal 'objects', the corrosion of which might be hiding the proper artefacts inside. X-radiography is one of these techniques that might be able to help us find more. We look forward to this exciting partnership! ■



Impacted musket ball.



Napoleonic ladies brooch



*Top, presumed authentic.
Bottom, re-enactor.*



About the author:

Hillery was in the WRAF and trained as a Ground Photographer. She took her archaeology degree as a mature student and then went on to do an MA(Res). She has been Waterloo Uncovered's Finds Officer since the very first Waterloo Uncovered dig. When not away with or involved in WU, Hillery works as an archaeologist, mostly in finds, though she does the occasional digging. In her spare time she helps her husband with their pewter button business and in October 2018 she will be starting a part-time PhD.

LEAD SHOTS: MUSKET, RIFLE, PISTOL OR CANISTER?

A key part of our research agenda is mapping the musket and other forms of shot. Emile Picard, Master's student at the University of Glasgow's Centre for Battlefield Archaeology, takes us through the technique of lead shot analysis, and all that can be learned from the humble musket ball....



At Waterloo Uncovered we have been excavating hundreds of musket balls. These tiny and at first sight, innocuous little balls of lead are littered everywhere around Hougomont, and outnumber any other artefact class found on the battlefield. Our approach to dealing with these projectiles on the project, differs from the 'normal' finds process. The location of every find, once discovered by the metal detectorists or team members on site, is digitally recorded with pin-point accuracy using our GPS Rover (very kindly supplied by Opti-cal) and uploaded into the ARK open source database (<http://www.lparchaeology.com/waterloouncovered/>), and web GIS. Through this system we are able to view its location instantly in 3D space and its relationship to other artefact classes around it. However this is just the first step in a long chain of understanding of these tiny metal artefacts. The real investigative work starts in the Finds Lab.

WHOSE BALLS ARE BIGGER?

The technique of lead musket shot analysis is relatively new (as is Conflict Archaeology itself!). The technique was first pioneered by Daniel M. Sivilich on assemblages of finds from American Revolutionary battlefields and encampments in 1995. It was first used in the UK in 2008, with Glenn Foard's work on English Civil War lead shot, and also more recently in 2015 by A. Schürger on 17th century assemblages from the Battle of Lützen (Germany).

The basic principle of the technique comes from understanding the different calibres of types of weapons used in a battle. For some battles in history this will lead to a dead end, as the similarities will be too great, or perhaps sources do not leave us enough information to tell who used which calibre. At Waterloo, one of the most thoroughly-documented early modern

battles, we are gifted with extensive detail available on practically all the regiments and battalions that fought—which weapons they were equipped with and crucially, the calibre of the ammunition they fired from those weapons.

Wellington's allied army was equipped with two types of weapon. The first, the standard smooth bore issue in the UK infantry, used from 1722 to 1838, the 'British Land Pattern Musket' more commonly known as the 'Brown Bess'. The Brown Bess weighed-in at around 11 lbs, and had an effective range of 80 yards with a possible rate of fire between 3 and 4 rounds per minute. It had a calibre of 0.75 inch (18.7 mm). The second, the Baker Rifle, had a rifled bore (to guide the flight of the shot more accurately) and was issued to rifle battalions and the King's German Legion light battalions. This was a longer-range weapon perfect for skirmishers, to pick off key targets such as officers or artillerymen. These weighed around 11 lbs, 2 oz, but took longer to load and fire with an expected rate of 2 rounds per minute. They had a 0.615 inch calibre (15.62 mm).

Napoleon's French army of veterans used the Charleville Musket, which fired a ball with a calibre of 0.69 inches (17.5 mm). This weapon is said to have been admired by officers in the Anglo-Allied army. It was a slightly longer-barrelled weapon (44.76 inches in length) that could fire at longer range, though perhaps disadvantageously had a smaller bore—which meant that the Allies could reuse the French shot, but not the other way around.

"Their [the French] fine, long, light firelocks, with a small bore are more efficient for skirmishing than our abominably clumsy machine"... "of bad quality; soldiers might be seen creeping about to get hold of the firelocks of the killed and wounded, to try if the locks were better than theirs, and dashing the worst to the ground as if in a rage with it."



Two musket balls from Waterloo Uncovered. Front, the smaller French shot (0.67 mm), behind, the larger Allied shot (0.76 mm).

THE SIVILICH EQUATION

In some cases, the process for identifying a musket ball's allegiance is easy. First the object is carefully cleaned with water. Then a caliper is used to measure the diameter of the object, and we can simply use this cross measurement to deduce a French or Allied-Anglo calibre. Sadly however, most of the shot that comes into the finds lab at Waterloo Uncovered is deformed, and this is when the 'science' comes into the equation.

First formulated by Dan Sivilich in 1995, the 'Sivilich Equation' uses the density and weight

measurements of the lead shot to deduce the diameter and calibre with the following equation:

Diameter in inches (calibre) = $0.223204 \times (\text{the average density of a musket ball after Sivilich 1995}) \times (\text{weight in grams})^{1/3}$

This formula is more accurate in many cases than purely taking the diameter of perhaps a less-deformed musket ball, which might have an irregular diameter.

So now, by adding two extra steps, taking the weight measurement and applying the calculation we have a pretty good idea of which side our musket balls come from no matter how deformed they are. This method is also far more accurate for many musket balls that are perhaps just a bit 'squashed' thereby giving us a deceptive view of how wide the diameter really is. Combining this data with the mapping, is one way of decoding the battlefield.

WAS IT EVEN FIRED?

Once the calibre has been deduced, another stage of the analysis is to look for evidence which might be able to give us further clues as to the manufacturing process, the firing of the ball, its impact and more. This analysis often focusses on any markings, deformation, special features or patina on the lead shot.

Shot is found in many places on the battlefield of Waterloo. But what dictates that a musket ball would end up in a particular position on the battlefield? As basic as it sounds, it is important to look for evidence of firing—showing that a shot actually participated in a firefight, as opposed to merely being dropped in the heat of battle. The most common of these signs is the "banded bullet" or the "barrel band" formed as the shot is fired and bounces against the barrel. The banding often happens at the widest part of the lead shot, either all the way around or just on a part of it. In the band, linear striations are visible, which can sometimes be confused with rifle marks from a rifled barrel. Further evidence comes from impact deformations and from ramrod marks, as the ramrod is only used when the lead shot is already in the barrel.

TELL ME MORE!

In addition to the musket balls at Waterloo, other types of ammunition we identify include rifled bullets (with their distinctive rifled patterning) and also canister shot, which bears specific markings. Also known as 'tin case shot', this type of anti-personnel ammunition is fired from artillery, and is composed of musket balls packed into a cylindrical tin box. When fired, the tin can shatters, sending the canister shot shrapnel spattering in several deadly directions. The lead shot from the tin case is easily identifiable because of the shape and impressions on the shot—they have the shape of hexagonal dice, owing to the combination of heat and pressure from smacking against the other lead shots in the tin case as the can is fired. That said, if completely deformed it is hard to identify such marking, and the Sivilich equation again has to be applied in order to rule out its use as a musket shot. This is also our method for identifying shot used for pistol weapons, which are also often deformed, but are considerably smaller than either the French or Allied musket bores. Understanding the location and distribution of these particular forms of ammunition is one of the particularly interesting aspects of our work at Waterloo Uncovered, as the pistol was basically only lethal at point-blank range and would only ever be used for close-quarters, hand-to-hand fighting.

This rapid identification on site of our shot is essential for our excavation. By identifying the source of the shot, we can start to untangle and analyse meaning in the location and distribution across the battlefield. We can identify clear clusters and concentrations that are evidence of intense fighting over the course of the battle for Hougomont. ■



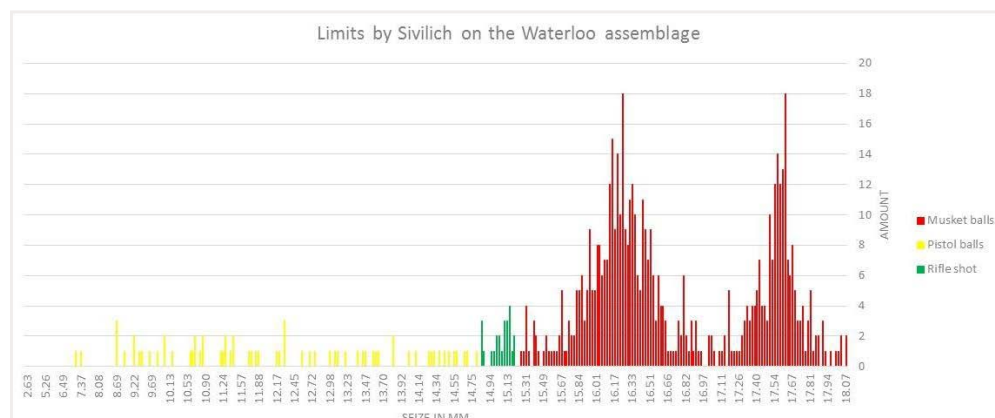
An Allied musket ball with a very faint 'barrel band' of linear striations along the left of the shot as pictured here.



A French musket ball BA15HOU_92, showing a significant ramrod deformation.



Completely flattened French musket ball BA15HOU_355.



Emile's research on the project's musket ball assemblage, clearly showing the two calibre weight groupings of each side (Picard 2016).



About the author:

Emile Picard (26) comes from Leiden, the Netherlands. He has studied (Military) History at Leiden University and graduated with merit in Conflict Archaeology & Heritage at the University of Glasgow. His main lecturer Prof. Tony Pollard, introduced him to Waterloo Uncovered. After he decided to write his thesis about the analysis of lead projectiles from the Waterloo Uncovered excavations of 2015 and 2016, Emile came on site for both years to do his research.

HEDGING YOUR BETS

One of Waterloo Uncovered's visiting historians, Alasdair White FHEA FINS, explains how such a simple thing as well-stocked hedges could have been the difference between victory and defeat at Hougoumont...

One of the great historical mysteries concerning the battle is how a total of 1,400 soldiers from the German-speaking 2nd Nassau regiment and the English Guards were able to hold off over 6,100 French troops of Jérôme-Napoleon Bonaparte's entire 6th Division. In practical terms, given the weaponry of the time (whereby three shots a minute would have been fast), and with only a two metre high wall to impede them, such a mismatch of armed strength should have had French infantry swarming over the wall and into the garden.

The hagiographic historians of the era chose to present this as a result of the gritty determination of the English Guards in the face of overwhelming odds, despite the fact that for the first three hours of this attack, the Guards were outside the farm, and that the interior itself was garrisoned only by the Nassau regiment. The same historians tended towards improbable descriptions of masses of French soldiers being repulsed by the soldiers behind the garden wall. But to understand what really happened, it is necessary to understand the shape of the contemporary landscape at the time of the battle, both its open areas and the areas that would have provided cover, such as trees, vegetation, ditches, and perhaps most critically in the battle for Hougoumont, its hedges.

Of this, only traces survive in the modern day, the woodland to the south having completely vanished, bar the three sweet chestnut trees which stand sentinel marking its edge.

CARTOGRAPHIC CLUES

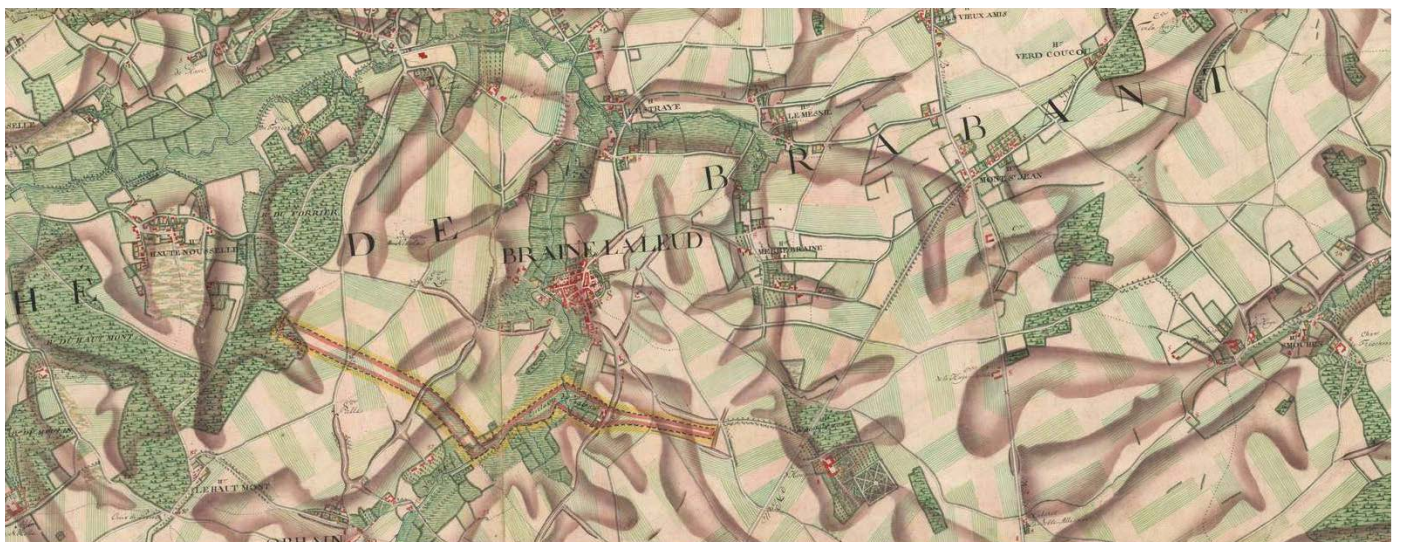
However, contemporary maps do exist to give us clues. The Ferraris Map of the 18th century, provides us with a remarkable source for reconstructing the battle landscape. Joseph Jean François, Count de Ferraris (1726-1814), a major general in the Austrian Netherlands and a skilled cartographer, was commissioned by Joseph II, Emperor



The Chateau d'Hougoumont, circa 1815, in the days after the Battle. Getty Images.

of Austria, to produce a detailed *Carte-de-Cabinet* of the Austrian Netherlands. The maps, drawn to a scale of 1:11,520 and forming a collection of 275 hand-drawn and hand-coloured maps each being 90 x 140 cm in size, were published in 1777. These were accompanied by twelve volumes of handwritten commentaries relating to topics of economic or military interest. The Ferraris maps were used extensively by all the commanders during the French Revolutionary and Napoleonic wars and it is known that both Napoleon and Wellington had copies on which they based their strategies for the 1815 campaign. The entire Waterloo battlefield can be found towards the bottom right-hand corner of *feuille 78 – Braine la Leud* (Braine l'Alleud as it is now known). In the context of an open and arable land with few hedges, Ferraris was rigorous in defining hedges wherever they occurred, as they showed where animal husbandry took place as well as their use as a barrier or obstacle in military terms.

Those that did exist surrounded parcels of woodland (to keep pannage pigs inside the wood) and around the policies



The Ferraris Map of 1777 showing the Braine la Leud area.



"The Killing Ground" at Hougomont during the WU 2016 field season.



The assumed line of the southern hedge has always been presumed to follow the line of the modern fence.

and orchards of major houses. At Hougomont, as with other prestigious properties, boundary hedges were used to restrict access to the property and less dense hedges were used to contain animals. For a hedge to be effective in containing animals, it had to be stock-proof and this required a mixed composition of robust species such as hawthorn (*crataegus monogyna*), black thorn (*prunus spinosa*), beech (*fagus sylvatica*), and hornbeam (*carpinus betulus*), all of which can be quickset (live twigs and branches planted immediately into the ground), grow fast and can be planted at 10-15 cm intervals to create a dense, spiny hedge that, when mature, is virtually impossible for animals to push through. In this area of Brabant-Wallonia, most boundary hedges were planted on an embankment along a road or pathway, or on the inner side of a water course, while other hedging was planted on raised dykes, perhaps only 15 cm high, with a shallow ditch on the outer side.

When mature, such hedges were rigorously maintained with gaps being filled by quickset repairs and the general density maintained by trimming with billhooks to a width of about 70-120 cm and a height of 175-250 cm, the height being that which can be reached by an average male standing on the ground and using a long-handled billhook.

These deciduous hedges are opaque during the late spring to early autumn but remain effective windbreaks year round and so were often used to protect orchards and enhance the growing conditions on the leeward side. It is this use of hedging that can be found at Hougomont. The Ferraris map shows that at Hougomont, all parcels of land were hedged, including the woodland to the south; also that the walled garden had a hedge as its northern boundary while the small orchard, a 30-metre-wide area along the outside of the south wall of the garden, had a hedge separating it from the southern woodland.

Another key cartographic source, the cadastral maps of the property, prepared in 1816 and 1820, confirm that the land usage indicated by Ferraris at Hougomont was the same as at the time of the 1815 battle with the exception of the star pattern arboretum, which had been felled and converted to arable and pasture; what is even more important is that the hedges defined by Ferraris can be confirmed as still existing.

It is these hedges that made Hougomont such a defensible position, and the one between the small orchard and the southern wood (creating the area that was to become known as "The Killing Ground") is almost certainly the key as to how the allies maintained the defence of Hougomont.

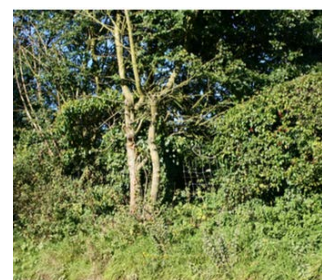
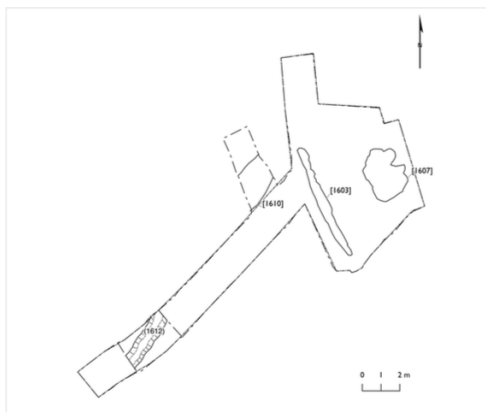
THE BATTLE FOR HOUGOMONT

At 11hr30 on 18th June 1815 Hougomont was attacked, with the consensus that the first shot came from English artillery against a column of French infantry. The French artillery opened up an undirected barrage against just 470 defenders stationed in the wood (the two Nassau companies, the two Hanoverian half companies and the Brunswick Field Jägers) as skirmishers. With the French advancing along the north-south track that ran uphill to the south gate of the farm, the broken and uneven ground in the wood, the drainage gullies, together with the density of the trees and the undergrowth must have restricted the speed of the advance.

Eventually the French reached the northern edge of the wood. The defenders were forced to make a rapid retreat, with some entering the south gate of the farm, some spilling around the west wall and the rest retreating eastwards into the great orchard. As the French reached the edge of the wood they were faced with the



Close ups of the hedges as depicted on the 1816 D'Oultremont plan. Trench 16 of the 2015 field season identified the line of this hedge (1612).

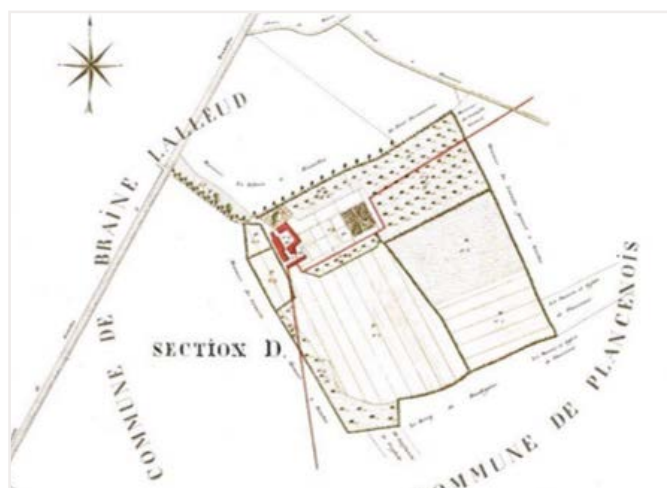


An example of mixed hedging. This hedge is on similar soil to Hougomont and is at Papelotte on the extreme Anglo-Dutch left flank, 3kms to the east.

Photo ©White.



Map extract from Ferraris 1777.



Map extract from Cadastral 1820 (map 2).

massive walls of the farm and a high, dense, quickset, hawthorn hedge, which French accounts claim as completely obscuring the garden wall behind it. This brought the entire French advance to a stop with the only ways forward being a frontal assault against the buildings held by the Nassau grenadiers, a westward flanking movement against the Coldstream Guards and the Light Company of the 3rd Guards, or by forcing a passage through the hedge to try and take the wall, now defended by around 350 Nassau infantry.

Many of the French, using the hedge for protection, headed east to try to gain entrance at the junction of the hedges. Forcing their way into the great orchard they were faced by the 135 Nassau troops stationed there, together with others who had retreated that way. The French received enfilading fire from the garden wall on their left and took heavy casualties. Meanwhile the defenders fought in loose order from tree to tree but were rapidly pushed back to the sunken way, where they took up a defensive position. Two companies of the 1st Foot Guards then joined them and together they pushed the French back to retake orchard. To the west, Macdonnell and the Coldstream Guards launched a counter-attack and drove the French back deep into the wood, but were unable to expel them completely.

By 12hr30 the second French attack was in motion with Soye's 2nd Brigade 6th Division (another 3,010 men) attacking from the west and entering the wood. An attack was pressed down the west side of the farm, driving the Guards under Macdonnell back to the north, where they entered the lower courtyard through the north gate, closely pursued by around 30 Frenchmen under the leadership of a sapper officer. This resulted in a fierce skirmish in which all the attackers were killed, and the north gates forced shut and barred by a small group of officers and men led by Lt. Col. Macdonnell himself.

During the *mêlée* that took place around the north gate, French skirmishers took up position in the *Pré aux (Deux) Etangs* to the north of the *Rue aux Loups* (sunken way) and fired on the battery in the trees in the ridge above them. This was a point of extreme

danger for the Hougoumont position and three companies of Coldstream Guards under Mackinnon and Acheson were sent down to relieve the pressure.

At 1400hr another 3863 troops attacked the great orchard, bringing with them a howitzer placed near the southeast corner of the garden wall. This was used to fire at the farm buildings to the west, setting them alight. At this point, the hedge at the juncture proved to work against the allies who were sent to dislodge the gun: "We tried in vain to pass through the hedge, We suffered enormous losses...."

Between 14hr45-19hr30, the Allied Army (now 2,400 in the farm and orchard against 10,000 French soldiers) were able to retake the Great Orchard from the French, driving them back with cannon fire. The accounts become less clear, but it is presumed that eventually a stalemate around Hougoumont ensued as exhaustion set in, and as the French forces shifted focus to Wellington's main line. At least by 19hr00 the KGL, Hanoverian, and Brunswick units were helping to clear both the orchard and wood. By this time Prince Jerome, obsessed with taking the farm, committed approximately 10,000 troops to the fight for Hougoumont. There is little doubt that the battle for Hougoumont was militarily significant and a major contribution to the final defeat, depleting the French army enough for the Allied Army to hold out until the arrival of the Prussians.

The location of the hedges, so pivotal in aiding this defence has been a key target of archaeological research, alongside the mapping of shot in the Killing Zone. So far our seasons of work in 2015 and 2016 have identified the possible line of the contemporary hedge running northeast-southwest, at a junction, which possibly was a weak point where French soldiers could gain access to the Killing Zone and other areas. Several musket balls were detected in this trench, and it will be an on-going research aim to compare the analysis of the two. ■

The full study of the hedges at Hougoumont can be found in Alasdair's report "Of Hedges, Myths and Memories" (2015).



About the author:

Alasdair White is the author of a number of books on the 1815 Belgium Campaign, as well as an in-depth monograph on the chateau-ferme de Hougoumont. A battlefield guide for the last 25 years, he is a contributing author to the papers published on the archaeology undertaken at Hougoumont. A professor of behavioural economics, he has written three management books and a number of much-cited papers and helped set up the first Waterloo Uncovered digs.

STORIES

ARCHAEOLOGIST

DOMINIQUE BOSQUET

ARCHAEOLOGIST, DIGS 2015-2016

Dominique is a senior archaeologist of the SPW, Wallonie, and a part of the management team at WU. He leads a crack team of local Belgian diggers on site who understand the local stratigraphy like the back of their hands...



I have been an archaeologist since 1993 and started my career at the Belgian Royal Institute for Natural Sciences, working on the high speed railway excavations spanning from French to German borders across Belgium. The work involved several settlements dating from Prehistoric to Medieval periods, though I consider myself to be a Prehistorian by trade. In 2009, I was engaged at the SPW department at the Walloon local administration, which was—and still is—the main authority regarding archaeology in Wallonia. It was in this position that I was contacted by Charlie Foinette and Alasdair White telling me of an archaeological project, which they hoped would be granted an excavation permit. Frankly speaking, I was quite doubtful about the value of inquiry into Hougoumont. Unlike Prehistoric archaeology, where so much is to be learned through archaeological investigation, this is less the case for the 19th century, especially for one of the most well-documented events of modern European history.

Being conscious of the considerable mass of information surrounding the battle, I was wondering what archaeology would be doing in the midst of all this? Spending two hours with these two fellows was however enough to convince me that not only the excavation permit should be granted, but that better still, SPW should be associated with the excavation and actively take part in the project. Indeed, it rapidly appeared to me that archaeology could help make historical accounts more objective, as it relies on bringing to light physical facts, that are then irrefutable (although of course their interpretation can vary). This is not always the case with all the texts and paintings, personal accounts and illustrations, which have detailed the progress of this bloody conflict in great detail.

I was already aware of Operation Nightingale, another project which brings together archaeologists and veterans of the British Army to offer them care and recovery, and the endeavour had certainly interested me. That said, as a civilian, the army seemed a strange and 'other' world, and I was unsure of what my expectations would be for working alongside these ex-soldiers, some of whom have been heavily affected and traumatised by their experiences. Upon meeting them, they were just normal people, like my own team; ready for orders, and keen to get stuck in to the archaeology in a military-style fashion. This probably explains why archaeologists and military people make such a good partnership. Whatever their history or their journey, both are keen to 'get stuck in'. At the end of the excavation campaign, friendships had been forged between team members, and trust established in a sustainable way within the management team from both sides of the channel. Indeed, this international team has never struggled to find consensus on scientific issues or decisions about how to carry out research at Hougoumont.



Dom in the Sunken Way with trench supervisor Emily Glass.

Since April 2015 we have been returning every year to the site of our investigations, at the Ferme d'Hougoumont—the emblematic site of the battle, where, according to Wellington's predictions "Waterloo was won....", or of course lost. These excavations, which take place in an atmosphere of frank camaraderie among nearly 60 people in the field, are foremost an opportunity for all to master a wide range of archaeological methods, from the simplest to the most sophisticated. More than on any other site, to investigate on the battlefield requires the use of several methods in order to uncover quickly and precisely the often fleeting and poorly-preserved archaeological traces at Hougoumont. Collaboration with various institutions and colleagues specialising in these disciplines plays a major role here. Since April 2015, many results have been obtained and published in reports submitted at the end of each campaign, which are all freely available on the project's website (www.waterloouncovered.com). But questions remain, in particular regarding the location and configuration of the mass graves and pyres that were dug and maintained to clean the battlefield strewn with thousands of corpses several days after June 18th. The research is to continue in the years to come, on other landmarks of the battle: the Ferme de Mont-Saint-Jean, the Ferme de la Haie Sainte, but also the villages, roads, rivers, fields and which also served as the framework for this bloody conflict.

Longue vie à Waterloo Uncovered ! ■

CASSANDRA GLEESON

VETERAN, DIG 2015

Medic, RAF.

During an NLP course, I met a chap who got talking about the Defence Archaeology Group and all of the great trips he had been on. Having a love of history, I begged him to get me involved. He got me in touch with Waterloo Uncovered. I had been a Medic in the Royal Air Force for 6 years and was especially excited about getting out there, meeting new people and learning new skills.

I honestly didn't know much about the Battle of Waterloo, as my passion was more for Tudor history, but after a little reading I was definitely excited to learn more. So I packed my bag and headed to London to meet the rest of the group for the drive to Waterloo. Instantly I was struck with how friendly everyone was. Some of them had been on other digs and already knew each other, but they made a real effort to welcome us 'newbies'. I met Mark and Charlie as they organised who would go into which vehicles. I ended up in the back of a Land Rover with Ben, Lee, Keith, and Gary. We all chatted like mad during the drive and I received the typical teasing I always get for being in the RAF. It turned out that Ben, Lee, and Keith were all Coldstream Guard veterans and also new to archaeology. It wasn't until we got onto the ship to cross the channel that I noticed that Ben was a double amputee. On the ship, he tried to avoid large crowds and as we were eating I noticed that he looked incredibly uncomfortable; he confessed to me that, since he lost his legs, he hated the way strangers looked at him. My heart broke a little for him as he described having to move to the highlands of Scotland to get away from 'people'.



Cassandra with her fellow diggers in the Killing Zone.

After a long drive, we finally arrived at the hotel. I was chuffed to be staying in such a nice place and didn't mind sharing a room. The next day we all got to introduce ourselves (a lot more 'RIF RAF' banter my way) and then headed out to learn more about the battle. We did a couple of tours and learned about the area and what had happened there. We were then placed into our teams and given our jobs for the day. Mine was helping to dig a MASSIVE trench. Turns out, I was completely incompetent at digging and needed to learn fast. I found the work itself to be incredibly dull, but I did love the company. Our team had some great giggles as we got about the task.

Although I found I really didn't like the digging of the trenches (us RAF tend to leave the digging to the Army) I did make some lifelong friends. I finally got the chance to work with Gary as he showed me how to use metal detectors to find hidden evidence. This I fell completely in love with—my first find was a horse's rein, which I found very exciting. Every artefact found was logged and a white flag placed where we found it. At first I wasn't sure why we did this, but was then shown by Mike, one of the L - P : Archaeology guys, the digital map of where each of our finds had been surveyed. Then Tony explained the distribution of the musket balls, which were proving and disproving history. Suddenly I was fascinated, and I finally understood why so many steps had been taken. We weren't just looking for treasure, we were proving history!

I was only able to stay the first week but that one week really did have such a positive impact on my life. Although I worked in the military, I didn't really get to see the aftercare of wounded veterans. Suddenly I was working with, and befriending, real heroes, veterans with severe PTSD, missing limbs and chronic pain. I noticed throughout the week a change in quite a few of them. In Ben alone, he went from avoiding people to being in the thick of it. No one saw his disability—we all saw a hard-working, eager-to-learn, crazy-as-hell, mate. We all took the mick out of each other but were also there for one another. I was so inspired by Ben and his story (trust me it's a corker) that I ended up naming my son after him. Here was a man who had a real passion for helping those with mental health problems, a man who gained his confidence back by the bucket load and who, despite what was thrown at him, managed to keep his amazing humour.

I have met up with Ben and Lee since the dig and was thrilled to discover that most of us have all kept in touch. When Lee became homeless, one of the archaeologists had even given him a place to stay. Ben has continued to be involved in archaeology. I haven't been able to join another dig myself due to pregnancy but I truly would love to. Digging those trenches, as it turns out, was totally worth it. For the friends I made, the humbling experience, the interest in the battle and if anything, I have become quite a good gardener! ■



Cassandra with Ben Hilton, and her son she named after him.

READING, TO REMEMBER

Alex Cauvi, Waterloo Uncovered's Communications and Administration Officer tells us about "Reading to Remember", a special fundraising event that will be returning to the 2017 field season...



People love a good story. Soldiers especially, if I am to believe what I'm told. We narrate our lives to friends, with a drink in hand. We read books and watch movies that take us away to different places, and alternative realities. A sense of history helps us define where we come from: the grand narrative of humanity that we teach to our children, passing it down each generation to preserve the memory of events and people long gone.

The Battle of Waterloo is one incredibly important event in the history of Europe, "a change in the direction of the world", Victor Hugo wrote. Over 200 years on, its dramatic story is still recounted around the world. It has everything it takes to be memorable: high stakes, large death toll, famous commanders... No narrative, however, can truly capture the complexity of the thousands of individuals whose lives were woven together into the fabric of history that day, and those many lives which were cut short. But maybe by reading the accounts from those who survived, we can remember them all.

This is what we did last year in Reading to Remember – a relay reading over 11 hours, roughly the duration of the battle. Waterloo Uncovered participants took turns reading accounts of the Battle of Waterloo, in the different languages spoken at the battle. The event took place in the chapel at Hougoumont, where the wounded took refuge in 1815. The idea came about whilst myself and fellow students Angel Li and Elly Steinberg were planning our MSc dissertation piece, a 30 minute documentary titled *Dig for Lazarus*, which documented the veterans' presence on the July 2016 Waterloo Uncovered dig. Finding a narrative is key to making a film, and to make a piece about Waterloo Uncovered, there was plenty of choice: archaeology, finds, veterans, and all the other team members on the dig, the Battle of Waterloo and those who fought it... to name just a few. Reading to Remember was a poignant way to link past and present, and while it was intended as both a remembrance and fundraising event, it exceeded our expectations, evoking very strong reactions from those who read or listened, and producing a source of wonderful film material. Some were touched by the similarities between the experience of soldiers in 1815 and their own soldiering experience, others, by the atmosphere of the chapel during this multilingual litany. All got to reflect, sometimes very emotionally, on the human experience, and on the cost of Waterloo.

In 2017, Reading to Remember is happening again. Over the course of one day on site, participants at the dig will take turns reading accounts of the battle. The readings will be recorded, giving the public – and those who want to kindly sponsor our participants – an occasion to hear stories from the battle, told in the voices of our team and in the unique acoustic of the chapel. Readings will be posted on our website:

www.waterloouncovered.com ■



About the author:

Alexandra Cauvi participated in the 2016 summer excavation with two other Imperial College MSc Science Media Production students, to make a 30 minute documentary about the veteran's experience of WU. Fascinated by the charity's work, she joined WU in November 2016, and is now the 2018 summer excavation's Project Officer. Before her move into the Science Communication world, Alex studied at Chimie ParisTech where she obtained a graduate degree in chemical engineering.

REMEMBERED AT WATERLOO UNCOVERED

The following accounts are passages read during the 2016 Reading to Remember... The readings covered both what happened during the battle, as well as the carnage that was left in its wake.

Many of the excerpts were taken from Paul O'Keeffe's seminal work "Waterloo: The Aftermath" published in 2015 on the 200th anniversary of the battle. All the excerpts here are taken from this book, unless otherwise stated.

'In one short day, 60,000 persons were in the vigour and pride of youth, made mute for ever, and their souls gone to that bourn, whence no traveller returns.'

— W. A. Scott (Lieutenant-General)

Riding on a captured horse bearing the brand of the French Imperial Guard, Captain Harry Ross-Lewin of the 32nd Infantry recorded the detritus: "broken gun-carriages, caps, helmets, cuirasses, arms... harness, accoutrements, pieces of battered uniforms, knapsacks, letters, and cards, that were strewn abundantly in all directions, and the crops levelled by the trampling of infantry and cavalry in the strife, plainly marked the extent of the field". He noticed particularly the profusion of drums, because the French drummers customarily marched at the head of an infantry advance and consequently were among the first to fall.

The immediate neighbourhood of Hougomont was more thickly strewn with corpses than most other parts of the field the very ditches were full of them. The trees all about were most woefully cut and splintered, both by cannon-shot and musketry.

The task of clearing the dead 'fell... to the peasants of the locality, and a hundred men had been employed for the purpose from the surrounding parishes. Some were said to have been forced to the work at bayonet point by the Prussians, and 'many were put to death for refusing.'

'Some lay on the ground with their entrails hanging out, and yet they lived.

These would occasionally attempt to rise...quickly falling back again, would lift their poor heads, and turning a wistful gaze at their side, lay quietly down again, to repeat the same until strength no longer remained, and then, their eyes gently closing, one short convulsive struggle closed their sufferings.'

— Captain Mercer's account of wounded horses on the battlefield

On the morning of the 19th, fatigue parties were sent, "as many as could be spared...to carry the wounded to the roadside, or any other convenient place where the wagons could be brought to convey them to hospital". But Sergeant Robertson and his comrades of the 92nd Highlanders had no sooner started than their work was interrupted by the order to march, and at seven o'clock they took the road south, dead and wounded to right and left. "No one could speak, so awestruck were we with the horrid spectacle," Robertson recalled: "Here lay French and British in all the agonies of death, many of them calling on us to shoot them and put an end to their sufferings; while others were calling on us to come back, and not leave them exposed to the inclemency of the weather, to breathe their last in a land of strangers, with no friendly hand to comfort them and close their eyes in death".

William Tomkinson of the 16th Light Dragoons saw one peasant pulling the boots off a soldier of the Guard not yet dead. Tomkinson "made the fellow desist" by thrashing him with the flat of his sword "and attempted to teach him we did not allow such proceedings". But civilian looters, though despised, were generally tolerated. Plunder might even be regarded as due compensation for wrecked farm buildings and spoiled crops.

Image: Crofts, Ernest, "Wounded French infantryman, with rifle" (1891). Prints, Drawings and Watercolors from the Anne S.K. Brown Military Collection. Brown Digital Repository. Brown University Library.

STORIES

VOLUNTEER

SUNNY HALLANAN VOLUNTEER, DIG 2015 & 2016

Sunny is the Rector of All Saints' Church, Waterloo, and explains here how the project is forging a long-lasting relationship with this local community.



The Rev. Sunny Hallanan talking at the 2017 diocesan meeting.

A few years ago, as a tourist in Paris, I saw a runner pass me and I thought 'wouldn't it be cool to live in a place tourists come to, only it's just home to you?' Then I realised—I do! Thousands of people come to see the place where I go running, it's practically in my back yard. Over the years, my church has tried to make a meaningful connection with the historic Waterloo battlefield, with mixed results.

Some years, the road closures around the 18th of June have meant we had to cancel worship services. Other years, we have been able to be part of the commemorations, offering plays and displays that connected participants in the battle with their descendants, as well as serving to remind us that sadly, war does not end war. Having Alasdair White (Waterloo Uncovered visiting historian) in our parish is, of course, a wonderful connection to the history.

As a military brat myself, I have mixed feelings about the battle re-enactors who come to 'play war' and dress up in costumes, many of whom have not actually served in real war. My grandfather fought near here in World War I and was killed in World War II. My dad fought in World War II, Korea and Vietnam. Two of my brothers served in Vietnam. So war is not a game to me, and I've always had profound respect for those who serve. Sometimes, when I go for a run on the Waterloo battlefield I have an eerie sense of the dead around me—so many of whose graves remain unknown. But it was not until Waterloo Uncovered came along that we found a truly meaningful way to connect All Saints' Church with our local history. Supporting good archaeological and historic research along with the participation of the veterans is just the kind of thing the church should be about. Waterloo Uncovered is an amazing combination of timely, practical discovery with the valuable human interaction of emotional and spiritual support, as the vets and academics form a working community.

My role has been to share my local knowledge, and just try to be as helpful as possible—whether running errands, or fixing lunches and teatime, or getting participants the best Belgian chocolates. And yes, as a priest, being available to listen, counsel and bless the work. The church is just down the road from the battle site, so we've also been open for Waterloo Uncovered movie night, and a few parties too. Through this project I've certainly come to know the history better. But I think, more important, is the story we are living now. Soldiers 200 years ago and soldiers today have the same heartfelt need for ongoing connection and community when the battle is over. Waterloo Uncovered provides that, and I'm thankful to have the opportunity to be a part of it. ■



Sunny discussing finds in 2016 with Finds Officer Hillery Harrison.

VICKI HAVERKATE

ARCHAEOLOGIST, DIG 2015 & 2016

Vicki manages Educational Outreach at University College Roosevelt, in Middelburg in the Netherlands and each season has brought students from their Social Sciences department with a variety of major specialisms to participate in the dig. She explains the outreach philosophy at Waterloo, and how we aim to involve people from all around the globe in our activities, as well as those who join us on site digging.



Vicki with her UCR students in 2015.



I'm an archaeologist with a love of fieldwork, but I also work in education and nowadays I'm mostly kept busy by educational outreach. The idea of outreach is to connect the university with its local setting. I help students and researchers to share new learning and to listen to what is really needed and of interest outside of our 'ivory towers'. A lot of what we do is focused on building relationships between groups of people who wouldn't otherwise come together.

When Mark first asked me if I would like to join the dig at Waterloo Uncovered I was mostly just excited by the chance to jump in a trench again. But, I soon realised that this was not just about fun for me, but also a great opportunity for students at University College Roosevelt (UCR). UCR is a small Liberal Arts and Sciences College, which means that we only teach undergraduates and that they follow a mix of subjects. Students can combine science, social science, arts and humanities with compulsory subjects like statistics and languages to put together their own program which eventually shapes into a 'major' and a 'minor'. We teach some great archaeology courses, but we don't often have the numbers or the resources to run a field school or interact with other leading researchers and practitioners like Tony [Pollard], Marc [van Meirvenne], Dom [Bosquet] or Stu [Eve].

Initially the idea of UCR's involvement was to encourage Dutch participation. The WU team really just wanted to represent all the nations involved in the battle and hoped that having the students along would enrich the social mix on site and perhaps draw attention to the rather forgotten role of the Dutch in the battle. What exactly the students did as a result was very much up to the University. In 2015 and again in 2016 we sent three students to excavate and one to work as a communications assistant. UCR expected that the students would gain fieldwork skills and be inspired to take either archaeology or communications further. The students have done us proud in both respects. They quickly learned their way around the trenches and the comms procedures and Hilde, Merlijn Kyra and Sara first came back to UCR to produce dissertations on related topics and then they all went on to postgraduate studies in archaeology and history!

What I had not expected, was that my escapist act of running off to a dig for the summer would bring me right back to what I normally do in the office. Namely, thinking long and hard about how people from really different backgrounds and perspectives can be brought together in collaborative projects to learn as much from each other as from the new challenges they tackle, and how this can ripple out into their social circles. And yet it struck me immediately that Waterloo Uncovered has this at its very heart. Co-operating with veterans, often people not so different in age from themselves, but with hugely different life experiences was for the students, and for me too, eye opening and rather profound. We realized too, that after the dig the students were talking to their friends and families about what they had learned from the veterans, just as much as they were talking about archaeology.

It is this interaction that we want to develop and monitor for the future. We are looking at ways to embed an outreach strategy into WU that offers veterans and students the chance to continue working together and allows us to showcase to local communities both the archaeological discoveries and our spirit of collaboration. ■

STORIES

VOLUNTEER

PETER GINN

VOLUNTEER, DIG 2015 & 2016

Peter is an archaeologist and TV presenter, well known for his work on the BBC historic farms series, such as Victorian Farm (2009), Edwardian Farm (2010), and Wartime Farm (2012). At Waterloo Uncovered he is the friendly face behind the camera, capturing what we do on site daily and bringing it to life on screen, so that the rest of the world can be a part of the action!



Peter in action—shooting interviews on his smartphone.

I have been involved with the project from its inception. I read archaeology at University College London and became heavily involved in public archaeology in my career. As the project progressed from an idea to a reality, my role became about exploring the possibilities of how we could present the archaeology of the dig to the public, and most importantly how we could ensure that people who were interested in the project could see what was going on during the excavations.

For the first excavation at Hougoumont Farm in April 2015, I was running around London getting equipment together, driving the minibus and fighting fires as and when they arose. Alongside professional filmmaker Rupert Barclay, we started documenting the project on video and taking numerous photographs of the excavation and its finds.

However, one of our goals had been to produce footage that could be released both during and after the dig and used with wider media, such as the augmented reality tours produced by Dr Stu Eve, and post excavation reports and updates. Filming on Rupert's broadcast quality camera was good and had to continue, but we needed a more instant and streamlined solution. Therefore, when we returned to Hougoumont in July 2015 I started filming and editing on my phone. Filming on just the phone has proved to be very good but has its limitations. I spend much of the dig walking around the site clocking up a good 10 miles a day. One policy is to not interfere with the archaeology, but what I've sacrificed in filming quality I've gained in speed and efficiency.

After each field season, the project often permeates my everyday life, as I spend much of my time spinning through footage and reliving the excavations. I have also helped set Waterloo Uncovered up at events like Chalke Valley History Festival. It is a huge honour to be part of such a great project, and I've learned so much: from exactly how battlefield archaeology can illuminate a day in the life of a historic farm, to the very real, beneficial, effects that a well-run excavation can have on veterans and non-veterans alike, on an almost unquantifiable level. ■

You can browse all our videos on our Youtube channel:

www.youtube.com/waterloouncovered

MORE STORIES FROM THE DIGS 2015 & 2016

The stories behind every participant are the most important aspect of Waterloo Uncovered. If you want to read more about those who came to our digs, whether they are serving personnel, veterans, archaeologists, volunteers, students or WU staff, you can visit our website and its "People" section:

www.waterloouncovered.com/people



The 2015 Team.



The 2016 Team.

MAPPING THE DATA AT WATERLOO

Dr Stuart Eve is a Digital Archaeologist and Partner at L - P : Archaeology. On the dig he uses digital techniques, such as 3D modelling and augmented reality to enhance our understanding of the archaeology at Hougoumont. Here he outlines some of the types of digital data we use at Waterloo, what methods we use to analyse and collect them and also a little bit about how we can use them to tell us more about the battle and the landscape of the battlefield.

We use and collect a vast array of different data during the excavation and post-excavation process—ranging from find locations, photographs, trench recording sheets, 3D models, mapping data and results of scientific analysis. We tie all of this data together using two methods. Firstly every single find we recover, every photograph we take, and every contextual unit of soil we excavate gets a unique number in the site database. We use the Archaeological Recording Kit (ARK) system developed by L - P : Archaeology to enter, share and interrogate this data online. The data within ARK is accessible immediately online (www.lparchaeology.com/waterloouncovered), meaning that it is possible to follow the excavation as it unfolds, online. Secondly we record the spatial location of all the data, allowing us to tie it into historic maps, geophysical surveys, elevation data and excavation records. This results in a fully featured archaeological Geographic Information System (GIS) (Figure 1).

We are lucky at Waterloo to have access to vast amounts of spatial data. The main background dataset we use are the modern aerial photographs from the Wallonia local authority (freely available via the WalOnMap web application at <http://geoportail.wallonie.be/walonmap>). These provide an excellent backdrop for us to overlay all of our other data on, which gives us a nice overview of the whole battlefield. In some cases, the resolution of this data is not sufficient, meaning when you zoom in very close, the picture becomes blurry and some of the more detailed elements of the landscape are hard to see. In an attempt to rectify that, Pierre-Michaël Warnier and Dominique Bosquet of SPW flew a detailed aerial drone survey of Hougoumont – providing much higher resolution photography (Figure 2).



Figure 2: WalOnMap aerial photograph overlaid with the higher resolution drone photography.



Figure 1: Many different types of data can be viewed within the GIS.

As well as modern aerial data, we can access the historical mapping of the battlefield to see how the landscape has changed over time. This becomes particularly pertinent at Hougoumont in the area of the former formal gardens. A map prepared by De Craan (Figure 3) just after the Battle shows the formal gardens as they were laid out on the day of the battle. A more detailed view is provided by William Siborne, the army surveyor commissioned to produce a scale model of the entire battlefield in the 1830s (Figure 4).

One of the aims of WU at Hougoumont was to investigate the garden area and see if any of the garden features survive under the ground. Before we opened any trenches however, we used a couple of other techniques to try and see beneath the soil. The first was geophysical survey as can be seen in some of the other articles in this review. The geophysical results are extremely impressive and nowhere more so than in the garden area. The garden features are clearly visible and complement the cartographic evidence perfectly. WalOnMap also provides access to the LiDAR data. LiDAR (LIght Detection And Ranging) data is created by flying a survey device mounted on a plane, which shoots a laser millions of times toward the ground. By calculating the time it takes for the laser to hit the ground and bounce back to the plane, it is possible to produce an extremely accurate elevation model. So much so that we can see the slight undulations of the previous garden in today's ground surface.

By putting all of this evidence together, we were able to accurately target a number of trenches within the garden to see if anything remained in the ground of the formal gardens and their layout. Rather incredibly, these trenches did not actually reveal



Figure 3: De Craan's map of the battlefield (1816).

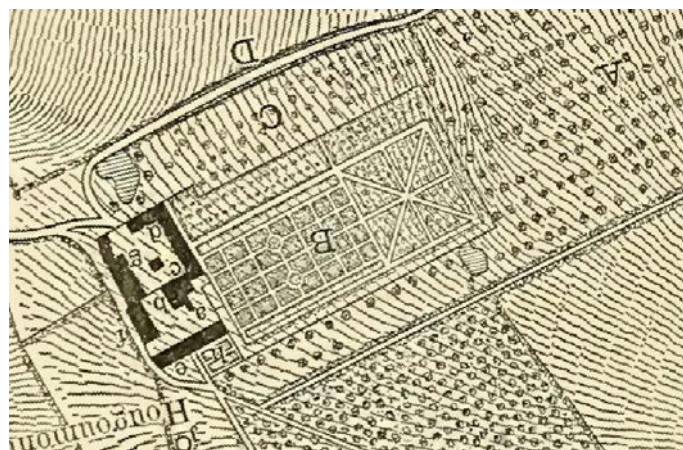


Figure 4: William Siborne's map of Hougoumont (surveyed 1830s).

any visible traces of the formal garden at all. It would seem the features were so ephemeral that they were not visible within the archaeological record – instead we are left with the traces that we have from the geophysical survey, the LiDAR and the cartographic evidence – demonstrating the importance of bringing all this data together into the GIS (Figure 5 and 6).

Sometimes however, the archaeological record does not agree with the data in the GIS, and highlights the importance of being aware of the error in historical records. An example of this comes from Trench 45 that we excavated in the courtyard of Hougoumont. Many of the buildings of Hougoumont were burned to the ground during the battle, and we only know of their existence through maps, engravings and historical accounts. We decided to investigate the footprints of these lost buildings, to get a better idea of the size, shape and construction of them. Trench 45 was targeted to hit the frontage of one of the barns in the courtyard (Figure 7).

As can be seen in Figure 8, the frontage of the building is approximately 2 metres back from where it is shown on the map. There are a number of possible reasons for this, the most obvious being that the original survey for the mapping was incorrect. It could also be a result of importing the map into the GIS software and a misalignment of geo-referencing (the process needed to take the scan of the original map and put it into its correct coordinates). A further intriguing part of this story, however, comes from another surveyor called William Siborne. As explained earlier, Siborne was commissioned by the British army to construct

a highly accurate scale model of the battlefield. The controversy over the construction of this model is the subject of a number of books and mainly revolves around the placement of the Prussian troops; however, the accuracy of the survey that Siborne undertook to produce the model's topography and layout itself has rarely been challenged.

Waterloo Uncovered were very kindly allowed access to the Hougoumont sections of the model currently held in the National Army Museum and the Royal Armouries in Leeds (Figure 11). We took a series of photographs from many different angles of the model and were then able to use these pictures (via a process called photogrammetry) to produce a virtual 3D model of the real physical model (Figure 9). Siborne took great pains to reproduce the exact areas of woodland, crop-types and watercourses, therefore when we import the 3D virtual model into the GIS we can effectively produce a set of "aerial photographs" taken from above the model. This is as close to Google Earth 1815 that we can get. When we zoomed into Hougoumont and the building frontage that we found in Trench 45 – we can see that it lines up almost exactly with the buildings shown on Siborne's model (Figure 10)!

As can be seen throughout some of the other articles in this volume, we also use the GIS (linked with the ARK database) to show the distribution of the finds across the site. By using the GIS and database together we can produce distribution maps for pretty much whatever attribute of the find we want. For instance, we can show all of the finds sorted by material (Figure 12). We can



Figure 5: Magnetic Susceptibility in the formal garden.



Figure 6: LiDAR data (hillshaded), showing the slight undulations of elevation within the formal garden.

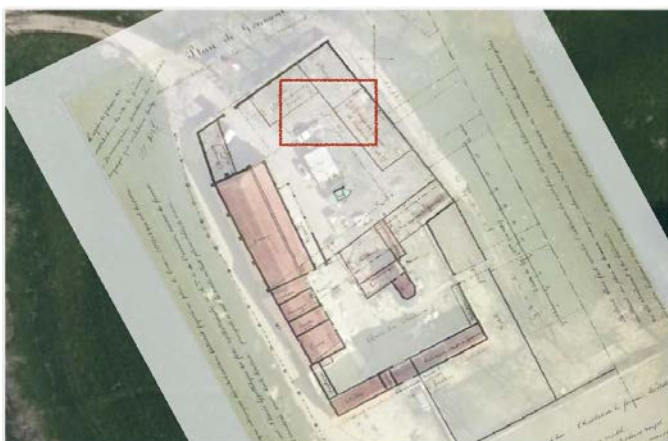


Figure 7: Military map of Hougoumont, overlaid on modern aerial photograph. Red rectangle shows area of interest.



Figure 8: Excavated trench overlaid on the map – showing the expected alignment (red) with the actual alignment as found (green).



Figure 11: 3D modelling Siborne's model at the Royal Armouries at Leeds.

also show the distribution of musket and pistol balls across the site. This can (and has) been used to quickly visualise the data and search for any patterns (Figure 13).

The vast amount of digital data on site means that we are always finding new patterns, new ways to visualise it and new information about the past. The ARK database is freely open and available for anyone to look at and use. There is a section for public comments under each find – which some interested people have already used to aid us in the identification of some of the more difficult finds. Please feel free to log in, look around and contribute to the growing database of knowledge about Waterloo (<http://www.lparchaeology.com/waterloouncovered/>). ■



Figure 10: Siborne's model with the excavated trench overlaid.



Figure 12: Distribution of finds across Hougoumont (cyan = lead, yellow = iron).



Figure 13: Distribution of musketballs by nationality (red = Allied, blue = French, yellow = Pistolballs).

**About the author:**

Stuart has been working as an archaeologist for the last 20 years, he is the founding partner of L - P : Archaeology, a commercial archaeological practice working in the UK. He specialises in all aspects of digital archaeology, using databases, GIS, Virtual and Augmented Reality to bring the past to life and to aid in archaeological interpretation. He is one of the Field Directors of the Waterloo Uncovered project, helping to shape the overall strategy of the excavations and ensuring everything is undertaken to the highest professional standards.



Figure 9: Siborne's model overlaid onto the modern aerial photographs.

WATERLOO 365

A tremendous amount of work is done during the two short weeks of our field season, but the work of supporting veterans and raising awareness is, in fact, something we do all year round! Florence Laino gives you a run-through.

You may have already caught us on the BBC's "Digging for Britain", or ITV News at Ten, but if you want to keep up with us whilst we're on site, you can follow our daily blog posted on the WU website (www.waterloouncovered.com), or also follow us via Facebook, Twitter, and Instagram, where we post regular pictures, and video-diary updates, shot and edited by Peter Ginn of TV's Victorian/Edwardian Farm fame, who demonstrates his skills behind, as well as in front of, the camera. Last year Tony Pollard and Stuart Eve pushed the boat out with live streamed student Q&As and tours of the dig, to great success, and with added comedic value that can only occur with watching two Doctors trying to operate a selfie stick.

More serious graft is put in to support our slogan: "the groundbreaking charity that combines world-class archaeology with veteran care and recovery". A key part of this commitment is a drive to publish our activities and results as quickly and openly as possible. Each year we publish a project design for the coming field work, and then the archaeological results which follow; we then publish a report about the impact of our work as a charity on our website. Our archaeological data is free for anyone to view,

download and comment on via our online database, ARK (www.lparchaeology.com/waterloouncovered).

In addition to this, April 2017 saw the first 'Waterloo Uncovered Conference', which brought together an international gathering of individuals and organisations from military, academic, archaeological, historical, artistic, scientific and welfare backgrounds to Belgium for a day of talk and debate, forging several new collaborations.

For two years running we have been exhibiting at the UK Chalke Valley History Festival, to its thousands of friendly visitors, school children and history enthusiasts (for more about some of the innovative and cool Augmented Reality tech we've been demonstrating here, you can read Dr. Stuart Eve's article, on page 53). Talks and lectures also extend across borders with our Dutch students from UCR working with local schools to teach them about the Battle of Waterloo, archaeology and the project. Building an international community is at the heart of what we're trying to achieve at Waterloo Uncovered.

Check us out and get involved! ■



Dr. Stuart Eve and Prof. Tony Pollard running a live tour of Hougoumont farm.



At Chalke Valley History Festival 2016, Dr Stuart Eve demonstrates a virtual tour of Hougoumont.



Major Charles Foinette (co-founder) and Dominique Bosquet (archaeological director) on Digging for Britain with Alice Roberts.



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About the author:

Florence Laino is a professional archaeologist with L - P : Archaeology, where much of her work focusses on Public Archaeology. Flo works for Waterloo Uncovered as its editorial and publications officer. Interested in reading more about the dig? See our reports page on the Waterloo Uncovered website.

WU NEEDS YOU!



We've begun our work at Hougoumont Farm but there's an entire battlefield still out there waiting to be excavated before it's too late and the archaeology is lost forever.

The more of the battlefield we explore, the more we will uncover; and the longer the project runs, the more serving personnel and veterans we will help.

To make the project work we rely on donations from trusts, foundations, charities and individuals. It costs around £1,200 (1,380 Euros) to take a soldier or veteran away with us for two weeks. That's just £80 (91 Euros) a day to support their recovery, welfare, and transition into civilian life.

And we're always happy to receive donations in kind. If you have a bit of kit (from a trowel to a JCB digger) that you can lend or give us, we'd be only too happy to hear from you.

To donate, you can use Just Giving, PayPal, or fill a donation form if you would like to donate in cash, cheque, or direct bank transfer. All methods are available through the links below. Please donate, to help our work carry on.

Thank you, and we are looking forward to hearing from you.

TO DONATE TO WATERLOO UNCOVERED PLEASE VISIT:

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CENTRE FOR BATTLEFIELD ARCHAEOLOGY, UNIVERSITY OF GLASGOW

The Centre for Battlefield Archaeology, University of Glasgow, is a pioneer and world leader in the fields of battlefield and conflict archaeology, and has carried out archaeological investigations on conflict sites ranging from the medieval to modern eras across the globe. The Centre provides Waterloo Uncovered with essential expertise, not least through the provision of its Director, Prof. Tony Pollard as one of our archaeological directors.



L - P : ARCHAEOLOGY

L - P : Archaeology are a UK based commercial archaeological unit, founded in 1999. L - P has won awards for its archaeological practice, and it is a ClfA registered organisation. They bring with them a variety of expertise to the Waterloo Uncovered project, including field direction, data management, surveying, and publication production.



ORBIT TEAM, DEPARTMENT OF SOIL MANAGEMENT, GHENT UNIVERSITY

Ghent University have provided the services of their Department of Soil Management, specifically the research group of soil spatial inventory techniques: ORBit. They specialise in mobile non-invasive techniques for soil inventory, including detailed archaeological prospections over large areas. The team has prior experience at Waterloo where it successfully surveyed an area of 10 ha next to the farm of La Haye Sainte using an electromagnetic induction sensor in 2014. It provides Waterloo Uncovered with mapped information to direct the field excavations. The team is currently also surveying the WWI fields near Ypres in Flanders and participates in the Stonehenge Hidden Landscape project.



SERVICE PUBLIC DE WALLONIE (SPW)

The Service Public de Wallonie (Walloon Public Service) is the Walloon region administration, which supports the Walloon government with its expertise, helping it in its missions and implementing its policies. Based in Namur, it is divided in 7 DGOs (operational directorates) represented in all Walloon provinces. The Heritage Department (including archaeology), is under DGO4, and also has a base in Wavre, the capital city of Brabant province. The archaeology department of Brabant regulate and oversee all archaeological works in the region. They collaborate with Waterloo Uncovered, and the project would not exist without them. Not only do they underwrite the necessary permits, but they are active participants in the project, providing valuable links to the local community and Belgian stakeholders.



Universiteit Utrecht

UNIVERSITY COLLEGE ROOSEVELT, UTRECHT UNIVERSITY

University College Roosevelt is the Liberal Arts and Sciences College of Utrecht University. They enable undergraduate archaeology students to take part in our July excavations. During the dig, and upon their return to the university, these students conduct outreach work, for example in local schools to tell more people in the Netherlands about the project and the role of Dutch troops in the battle. Students also conduct their own undergraduate research projects supported by Waterloo Uncovered and UCR.

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The Battle of Waterloo – Florence Laino (L - P : Archaeology), Major Charles Foinette (Waterloo Uncovered)

Archaeological Roundup – Professor Tony Pollard (University of Glasgow)

Geophysics at Waterloo Uncovered – Philippe De Smedt (Ghent University)

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Finds of Waterloo Uncovered – Hillery Harrison

Musket, Rifle, Pistol, or Canister? Analysing Lead Shots at Waterloo – Emile Picard

Hedging your bets – Alastair White FHEA FINS

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Waterloo Uncovered would like to thank its supporters, which include the following individuals, as well as the organisations listed over the page. We would like to thank them all very much.

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Robert Brookes

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Tim and Mary Clode

Hadyn Cunningham

Geoff & Ann Hawkes

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THIS REVIEW IS DEDICATED TO THE MEMORY OF CPL SCOTT HAWKES (1977–2016).

Scott served in the Royal Corps of Signals for 13 years and left the army after a rock climbing accident left him with injuries and persistent chronic pain. He participated in the Waterloo Uncovered excavations of July 2015 and July 2016, where he took part in the archaeology, created paintings and drawings of Hougoumont farm, and formed many friendships—closest of all, Guardsman Sean Douglas, whose words speak for us all:

Scott was a man who found a new light in History, archaeology and art after suffering a condition that he was determined would not get the better of him. I think I can speak for all of the WU team when I say that he was one of the kindest, most caring people we have ever met. He always had time to listen and help others no matter the situation. The first year of Waterloo Uncovered brought a new light to his eyes, after spending a week documenting historical finds from a battle fought 200 years ago.

He felt really at home and comfortable with the team, and soon found himself overcoming his mental blocks by getting into a trench and trowelling away. He also found himself at home as a soldier because no matter where a soldier goes, we find ourselves digging a hole. Scott found himself a rewarding role engaged in historical discovery, and it opened many doors for him. He got into art and developed a talent so few have, as he found himself being part of History and then recording it in a painting or drawing. It was something truly special. After feeling alone and lost, Scott found himself surrounded by true friends who enjoyed his company.

I remember a line that Scott had told me towards the end of the dig: "This is the first time I've felt like a human in 2 years". The truth is that Scott made us all feel a bit more human, and for that we will always be grateful.



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