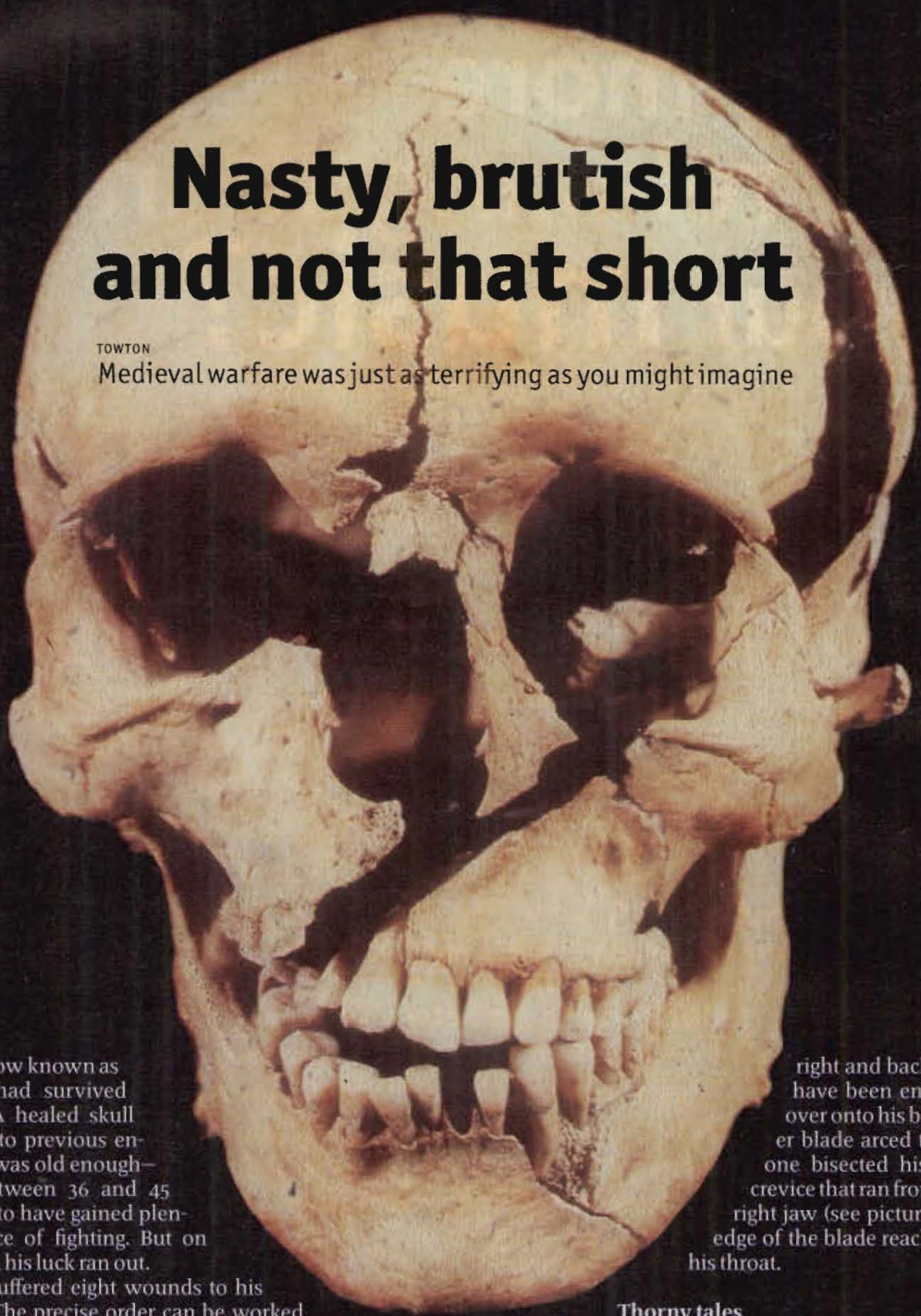
Nasty, brutish and not that short

TOWTON

Medieval warfare was just as terrifying as you might imagine



THE soldier now known as Towton 25 had survived battle before. A healed skull fracture points to previous engagements. He was old enough—somewhere between 36 and 45 when he died—to have gained plenty of experience of fighting. But on March 29th 1461, his luck ran out.

Towton 25 suffered eight wounds to his head that day. The precise order can be worked out from the direction of fractures on his skull: when bone breaks, the cracks veer towards existing areas of weakness. The first five blows were delivered by a bladed weapon to the left-hand side of his head, presumably by a right-handed opponent standing in front of him. None is likely to have been lethal.

The next one almost certainly was. From behind him someone swung a blade towards his skull, carving a down-to-up trajectory through the air. The blow opened a huge horizontal gash into the back of his head—picture a slit you could post an envelope through. Fractures raced down to the base of his skull and around the sides of his head. Fragments of bone were forced in to Towton 25's brain, felling him.

His enemies were not done yet. Another small blow to the right and back of the head may have been enough to turn him over onto his back. Finally another blade arced towards him. This one bisected his face, opening a crevice that ran from his left eye to his right jaw (see picture). It cut deep: the edge of the blade reached to the back of his throat.

Thorny tales

Towton is a nondescript village in northern England, between the cities of York and Leeds. Many Britons have never heard of it: school history tends to skip the 400-or-so years between 1066 and the start of the Tudor era. Visitors have to look hard to spot the small roadside cross that marks the site of perhaps the bloodiest battle ever fought in England. Yet the clash was a turning point in the Wars of the Roses. And, almost 550 years later, the site is changing our understanding of medieval battle.

In Shakespeare's cycle of eight plays, the story of the Wars of the Roses is told as an epic drama. In reality it was a messy series of civil wars—an on-again, off-again conflict pitting supporters of the ruling Lancastrian monarchy against backers of the house of York. According to Helen Castor, a historian at Sidney Sussex Col- ▸▸

lege, Cambridge, the wars arose from the slow breakdown of English government under Henry VI, a man who was prone to bouts of mental illness and "curiously incapable" even when well. As decision-making under Henry drifted, factions formed and enmities deepened. These spiralling conflicts eventually drove Richard Plantagenet, Duke of York, to assert his own claim to the throne. York was named Henry's heir, but he was killed in December 1460. His 18-year-old son, Edward, proclaimed himself king just before the battle of Towton.

That set the stage for a vicious fight. Edward had his father and brother to avenge. After killing him, Lancastrian forces had impaled York's head on a lance and adorned it with a paper crown. Following years of skirmishes others had scores to settle, too. In previous encounters, efforts had been made to spare rank-and-file soldiers. At Towton, orders went out that no quarter be given. This was to be winner-takes-all, a brutal fight to the death.

The result was a crushing victory for the Yorkists and for the young king. Edward IV went on to rule, with a brief interruption, until his death 22 years later—a death that triggered the final stage of the conflict and the rise of a new dynasty under Henry Tudor. The recorded death toll at Towton may well have been inflated to burnish the legend of Edward's ascent to the crown. Yet there can be little doubt it was an unusually large confrontation.

In a letter sent nine days after the battle George Neville, the then chancellor of England, wrote that 28,000 men died that day, a figure in accord with a letter sent by Edward to his mother. England's total population at the time is thought not to have exceeded 3m people. George Goodwin, who has written a book on Towton to coincide with the battle's 550th anniversary in 2011, reckons as many as 75,000 men, perhaps 10% of the country's fighting-age population, took the field that day.

They had been dragged into conflict in various ways. Lacking a standing army, the royal claimants called on magnates and issued "commissions of array" to officers in the shires to raise men. Great lords on either side had followings known as "affinities", comprising people on formal retainers as well as those under less rigid obligations. These soldiers would have been among the more experienced and better-equipped fighters that day (foreign mercenaries were there, too). Alongside them were people lower down the social pyramid, who may have been obliged to practise archery at the weekend as part of the village posse but were not as well trained. Among this confusion of soldiers and weaponry, almost certainly on the losing Lancastrian side, was Towton 25.

The bone collectors

He gets his name from the order in which he was removed from the ground. In the summer of 1996 builders working at Towton Hall, about a mile away from the main battlefield, discovered a mass grave. Archaeologists from the University of Bradford eventually took charge of an excavation of almost 40 individuals, 28 of whom were complete skeletons. (Further bodies have subsequently been recovered from beneath the dining-room at Towton Hall, which must make for conversation, at least.) The skeletons had clearly been the victims of great violence. Many display the same frenzied wounding as Towton 25. "Imagine one of those movie scenes with people closing in on a cornered individual," says Christopher Knüsel, one of the original team of archaeologists and now at the University of Exeter. "Usually the camera has to pan away because you cannot show some things. Here you see it." The location of the bodies, and subsequent carbon-dating, linked them conclusively to the battle of Towton.

It is the only mass grave of known medieval battle victims to have been found in England. The only comparable find is that of a mass grave of victims of the Battle of Wisby in Sweden in 1361, which was excavated in the early 20th century. That find was considerably larger—1,185 individuals from four separate pits—and notable, too, for the fact that the dead had been buried in their armour. The Towton men had been stripped before being thrown into the pit. The only personal effect found in the grave was a silver ring still encircling the little finger of Towton 39; it may have been missed because of the sheer quantity of gore.

But Towton has proved more instructive in some ways. The size of the Wisby find and the way in which the bodies there were removed, with the graves broken into grids and excavated one square at a time, made it almost impossible to reassemble skeletons later. At Towton, under the guidance of Tim Sutherland, an archaeologist who has been researching the battlefield ever since, skeletons were carefully recorded in the grave so that they could be put back together again. As described in "Blood Red Roses", a book on the archaeology of Towton, this has allowed a more complete picture of participants in the fighting to emerge.

Who are you calling short?

The men whose skeletons were unearthed at Towton were a diverse lot. Their ages at time of death ranged widely. It is easier to be precise about younger individuals, thanks to the predictable ways in which teeth develop and bones fuse during a person's adolescence and 20s. The youngest occupants of the mass grave were around 17 years old; the oldest, Towton 16, was around 50. Their stature varies greatly, too. The men's height ranges from 1.5-1.8 metres (just under five feet to just under six feet), with the older men, almost certainly experienced soldiers, being the tallest.

This physical diversity is unsurprising, given the disparate types of men who took the battlefield that day. Yet as a group the Towton men are a reminder that images of the medieval male as a homunculus with rotten teeth are well wide of the mark. The average medieval man stood 1.71 metres tall—just four centimetres shorter than a modern Englishman. "It is only in the Victorian era that people started to get very stunted," says Mr Knüsel. Their health was generally good. Dietary isotopes from their kneebones show that they ate pretty healthily. Sugar was not widely available at that time, so their teeth were strong, too.

Laid out on a laboratory bench in the University of Bradford's archaeology department, the biggest of the soldiers still look burly (though their bones, without any collagen in them, are incredibly light to handle). They seem to have led active lives. Bone

grows in response to strenuous muscular activity, particularly if exercise starts in childhood. For instance, the serving arm of a professional tennis player has as much as a third more bone in it than his non-dominant arm.

Some of the Towton men display the same type of unusual bone density. But it is distributed in a very unmodern way: their upper-arm bones are very well-developed towards the right shoulder and the left elbow. The medieval longbow, which placed huge stress on both the drawing arm and the arm that held the bow steady, may have been responsible. Towton 16 has something known as an avulsion fracture to his left elbow, a condition first clinically identified among young baseball players in America. This injury occurs only in adolescence, when the bones in the arm have not yet fully fused, and may have been caused by attempts to practise with an adult longbow. In 1420s England the teenage Towton 16 was suffering from Little Leaguer's Elbow.

Ground work

Piecing together what happened on a single day 550 years ago is exceedingly difficult. Even observers would have found it hard to discern a precise order of events in the confusion. Contemporary accounts of the battle may be politically biased or exaggerated. Mr Sutherland says that the idea of medieval soldiers slugging it out for ten hours, as the conventional view of the battle has it, defies credibility; he thinks there was a series of engagements that led to the main battle and that took place over the course of the day.

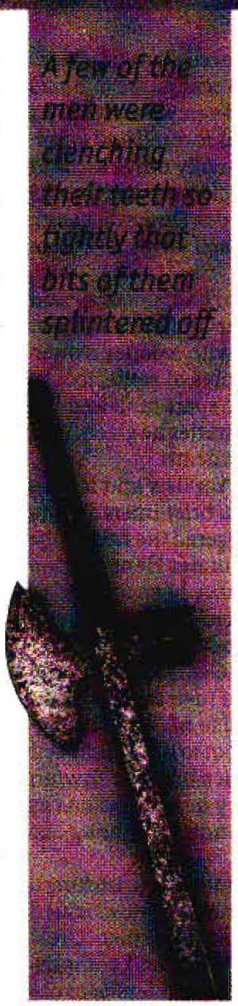
For a long time it was assumed that archaeology could not help much. That changed with work done in the 1980s at Little Bighorn in Montana, site of George Custer's "last stand" against native American warriors in 1876. A brushfire allowed archaeologists to re-examine the site, using metal detectors to map the location of spent cartridge cases and bullets. By matching them to the weapons used that day, researchers could trace the movements of soldiers over the battlefield. The work suggested that the engagement was over far quicker than Custer's legend implied.

The Towton site is 400 years older, presenting greater challenges. The battlefield was first swept for ferrous materials such as arrowheads. That search proved frustrating. The trouble was not too little material, but too much—bits of agricultural machinery and other things dating from after the battle. Looking for non-ferrous items—things like badges, belt buckles, buttons, pendants and coins that would have been ripped off during the fighting—proved to be much more fruitful. After identifying clusters of these personal effects, which seemed to mark the main lines of battle, researchers went back to looking for ferrous materials and started finding a concentration of arrowheads.

Arrows were not the only things flying through the air that day. Some of the first bullets were, too. The Towton battlefield has yielded up the earliest lead-composite shot found in England. Mr Sutherland thinks he may have found a fragment of a handgun, which was small enough to be carried around and probably set down on a trestle table or small carriage to be fired.

The arrows would have been fired as part of the opening exchanges. Accounts of the battle report that the Yorkist archers reached their target, but that the Lancastrians fell short, forcing them to move forward to engage in hand-to-hand fighting. The stress of this kind of fighting was immense: a few of the Towton skeletons had been clenching their teeth together so tightly that bits of them splintered off. This central confrontation would have been responsible for many deaths: Mr Sutherland says he has found a total of five pits on the battlefield that may be mass graves and plans to excavate them next year. But it was unlikely to have been the place where the Towton skeletons died. Their burial location, a mile from the battlefield, is one reason to think so. The way they were killed is the other.

Whereas many of the skeletons found at Wisby in Sweden had lots of wounds to their lower limbs, the Towton group had suffered a disproportionate amount of damage to their heads. Shannon Novak, a forensic archaeologist at the Maxwell School of Syracuse University who worked on the skeletons when they were first uncovered, was responsible for working out when and how wounds had been inflicted.



Injuries that have been sustained well before death are easy to spot because of the way fractured bone smooths as it heals. But before the discovery of the Towton skeletons, less work had been done to distinguish blows sustained at the time of death from those that may have occurred after burial as a result of rodents, earth-moving equipment and so forth.

Overkill

By looking at the different ways that bone fractures when it has fluids in it and when it has dried out, Ms Novak found that 27 of the 28 skulls she examined had suffered blows at the time of death. Not just one, either. Both Towton 16 and 25 were struck eight times and Towton 10 six times. Towton 32 suffered no fewer than 13 different blows to the head.

According to Graeme Rimer of the Royal Armouries, Britain's arms museum, medieval weapons had the capacity to decapitate or amputate at a single stroke. "Given how much damage you can do with one blow, why land another 12?" he asks. There were signs of mutilation, too: marks on the left side of Towton 32's head suggest that his ear had been sliced off.

The next task was to try to identify the weapons which might have done this damage. Ms Novak took a variety of medieval weapons from the collection of the Royal Armouries and poked them through pieces of acoustic ceiling tile to see what shape they made. Some of the matches were uncanny—the dagger that had to be twisted on the way out, the beak of a war hammer. The puzzling range of blunt, sharp and puncture wounds have their explanation in the lethal versatility of the poleaxe, with its bladed axe, top-spike and hammer (see picture).

Put all this together and two questions stand out: what had happened to the men's helmets, and how could their assailants hit them so many times? In the press of battle, after all, you are unlikely to want to spend time and energy landing repeated blows.

At this distance any theories are likely to remain plausible rather than proven. But the likeliest explanation is that the Towton soldiers (or some of them, at least) were among the Lancastrian soldiers routed from the battlefield. The secret of success in medieval battle was to hold ranks, so that comrades on either side would still be protecting your flanks. That is particularly true given the steep ground shelving away from the plateau where the main battle was fought. "If you move, you lose," says Mr Sutherland.

On the run from the battle, with Yorkist soldiers in pursuit (some of them doubtless on horseback), the men would have soon overheated. They may have removed their helmets as a result. Overhauled—perhaps in the vicinity of Towton Hall, which some think may then have been a Lancastrian billet—and disorientated, tired and outnumbered, their enemies would have had time to indulge in revenge. Even at this distance the violence is shocking. "It's almost as if they were trying to remove their opponents' identities," says Mr Knüsel of the attackers' savagery. Thanks to some unsuspecting builders and a team of archaeologists, they did not entirely succeed. ■