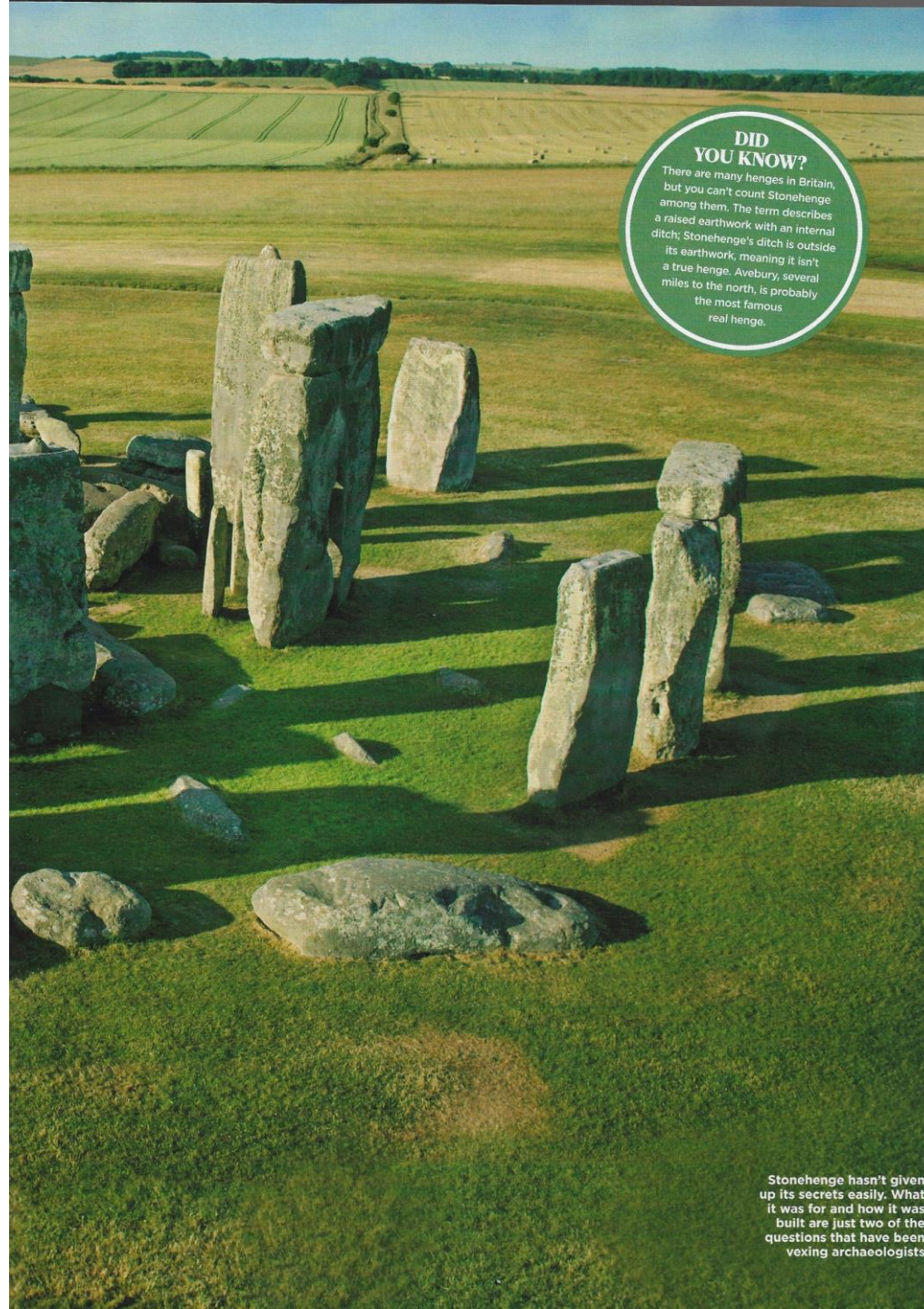


DR MILES RUSSELL is an expert in prehistoric and Roman archaeology, a Fellow of the Society of Antiquaries and one of only a handful of people to have excavated at Stonehenge.

UNEARTHING THE SECRETS OF STONEHENGE

It was a century ago that Stonehenge was gifted to the nation, but have we come any closer to understanding it? **Miles Russell** goes digging for clues



DID YOU KNOW?
 There are many henges in Britain, but you can't count Stonehenge among them. The term describes a raised earthwork with an internal ditch; Stonehenge's ditch is outside its earthwork, meaning it isn't a true henge. Avebury, several miles to the north, is probably the most famous real henge.

Stonehenge hasn't given up its secrets easily. What it was for and how it was built are just two of the questions that have been vexing archaeologists

One hundred years ago this year, Stonehenge came into public ownership. After many centuries of neglect, damage and wilful vandalism, the monument could at last be protected for future generations to enjoy. While state ownership brought with it limitations on access and the imposition of an entrance fee, it also ushered in a period of organised investigation and controlled conservation.

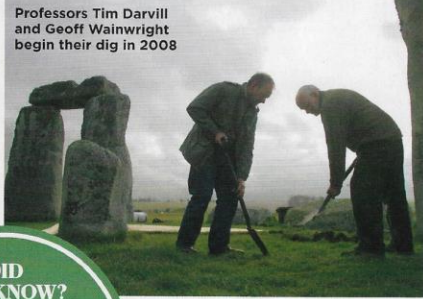
Standing proud on Salisbury Plain in southern England, Stonehenge is one of the most iconic monuments in the world. Well over a million people visit the site every year and numbers are on the rise, especially since the opening of a new visitor centre. Yet very little is really known about the structure; a complete absence of written material means that we can only speculate about its creation and significance. As a result, Stonehenge has been a constant source of conjecture, from the earliest recorded tourists to

the present-day archaeologists and academics who work there.

The site, as we see it, comprises a confusing jumble of stone uprights, some capped with lintels, together with their fallen compatriots, all set within a low, circular earthwork. You can't enter the stone circle during normal opening hours (that's only possible on special tours), so for most visitors the site is visible only from afar: tantalising, enigmatic and out of reach.

Damaged and distant though it undoubtedly is, Stonehenge remains awe inspiring, especially when one considers it was put together 4,500 years ago by a pre-industrial farming society using tools made of bone and stone.

Ten years ago, I was fortunate enough to be part of a team excavating within



Professors Tim Darvill and Geoff Wainwright begin their dig in 2008

DID YOU KNOW?
The earliest depiction of Stonehenge appears in the *Scala Mundi* (*Chronicle of the World*), compiled around 1340. The monument is drawn rather unrealistically, appearing rectangular (rather than circular) in plan.

the central uprights of Stonehenge in the first archaeological investigation there for 70 years. Led by professors Tim Darvill and Geoff Wainwright, the dig felt at the same time exciting and curiously sacrilegious. It was as if by removing the turf from this hallowed monument, we were in some way committing an act of desecration.

The many thousands of tourists who saw us were keen to touch the freshly excavated soil and ask questions about when the site was constructed, who built it, why was it here and, most importantly of all, what did it all mean? After nearly 400 years of archaeological examination at Stonehenge, that last question is perhaps the most difficult to answer.

DIGGING FOR TRUTH

The first attempt to resolve the date of Stonehenge occurred in the 1620s during an excavation commissioned by the Duke of Buckingham. Unfortunately we know little about the work, other than it exposed at least two large pits, together with "stagges horns and bulls horns" and "pieces of armour"

"VERY LITTLE IS KNOWN ABOUT STONEHENGE; WE CAN ONLY SPECULATE ABOUT ITS SIGNIFICANCE"



Victorian tourists flocked to Stonehenge, just as we do today - though they were permitted to picnic beneath the trilithons

Why was Stonehenge built?

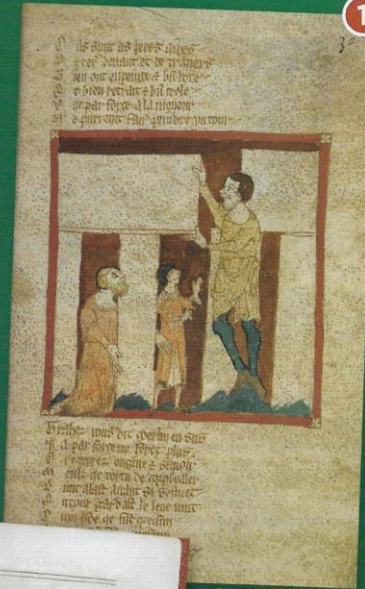
Over the years there have been many suggestions as to why the stones were set up on Salisbury Plain. The earliest interpretation was provided by Geoffrey of Monmouth who, in 1136, suggested that the stones had been erected as a memorial to commemorate British leaders treacherously murdered by their Saxon foes in the years immediately following the end of Roman Britain. The stones were, Geoffrey wrote, part of an Irish stone circle, called the Giant's Dance, which were brought to Salisbury Plain under the direction of the wizard Merlin.

The first detailed study of the stones, conducted by the architect Inigo Jones early in the 1620s, concluded that the monument could not have been the work of the primitive Britons who "squatted in caves" and lived "on milk, roots and fruits", but had to have been designed by the Romans, probably being a temple dedicated to Apollo.

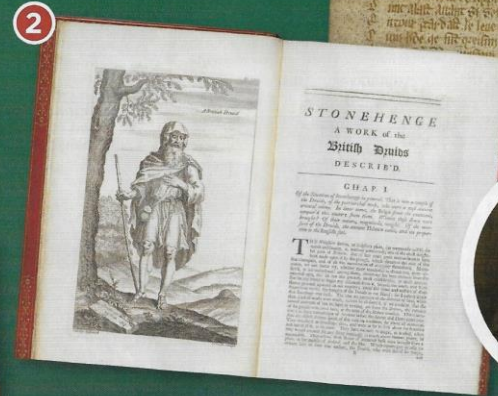
In 1740, antiquarian William Stukeley published his history of Stonehenge, subtitled "A temple restored to the British druids". Stukeley suggested that the circle had been built by a pre-Roman Celtic priesthood of Sun-worshippers descended from the Phoenicians, who had travelled to Britain from the eastern Mediterranean "before the time of Abraham".

The first official custodian of Stonehenge, Henry Browne, wrote and privately published the first guidebook, which he sold direct to visitors in 1823. Browne's theories, however, were shaped by the Old Testament; he postulated that the structure was antediluvian, meaning it was one of the few monuments that had survived the Biblical flood.

A popular theory within the 1960s counter-culture was that Stonehenge was an advanced form of computer or calculating device. In his 1965 book *Stonehenge Decoded*, astronomer Gerald Hawkins suggests that the stones had been positioned to accurately predict major astronomical events. Many of Hawkins' ideas concerning Stonehenge as prehistoric observatory have now been dismissed, although the summer and winter equinoxes remain popular times of the year to visit the monument today.



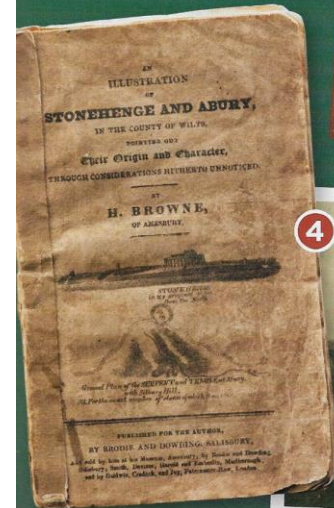
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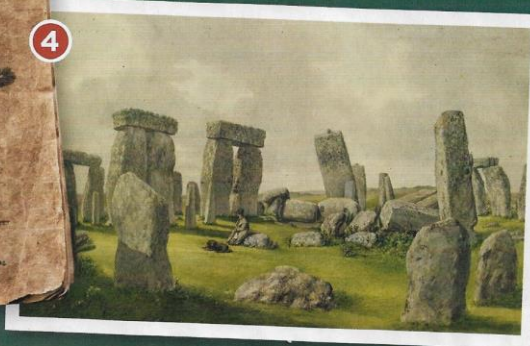
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1. Geoffrey of Monmouth speculated that the wizard Merlin helped to build Stonehenge
2. Druids may have practised rituals at Stonehenge, but they didn't build it
3. Inigo Jones was better known as an architect - his works include the market in Covent Garden
4. The first official guidebook, and the stones at they were in the early 19th century

eaten out with rust". None of these finds survive. Further exploration took place in the early 19th century, work which may have contributed to the overall instability of the stones. On New Year's Eve 1900, part of the outer circle of sarsen stones collapsed, taking down a lintel with it.

Concerns about the security of the stones led to a renewed phase of excavation and stone straightening. Between 1919 and 1926, excavations centred on the site's southeastern quadrant. Another campaign of excavation took between 1950 and 1964, together with a programme of stabilisation, repair and stone re-erection. Although reconstruction of the monument has helped ensure the long-term survival of Stonehenge, the results of these excavations were not published until 1995.

In 2008, two smaller, targeted archaeological excavations took place within the circle. The first (which I took part in), designed to investigate the date, nature and settings of the internal smaller stones, recovered significant evidence for late- and post-Roman use of the monument. The second, which focused on retrieving cremation burials from the earliest phase of the site, demonstrated that men, women and children had all been buried there between 3000 and 2500 BC. Research

published in August 2018 revealed that some of the prehistoric cremations recovered were of individuals who were not local to the monument, possibly - although this is yet to be confirmed - originating from western Wales, Ireland or northern Scotland.

Archaeological investigation, limited although it has been to date, has proved helpful in establishing a building chronology for Stonehenge. No single phase of the monument, it is fair to say, was probably ever completed; it is likely that it was an ongoing building project throughout much of its existence.

WHERE IT ALL BEGAN

As far as can be determined, work at the site began somewhere after 3000 BC, with the construction of a circular, externally ditched earthwork enclosure. Quite why this particular part of Salisbury Plain was considered important, we will never know, but the new enclosure, which contained cremation burials and settings for timber and stone uprights, including a number of bluestones from Wales, possibly acted as a form of communal cemetery.

A major change came at around 2500 BC with the addition of a horseshoe of sarsen (sandstone) trilithons surrounded by an outer circle of sarsens, all joined with lintels. The bluestones were, at this time,



TOP: The first major repairs and excavations were made between 1919 and 1926

ABOVE: Sarsen stones are plentiful on the downs near Stonehenge

repositioned in a double circle between the larger sarsen settings. The Station Stones, a series of sarsens placed within the inner edge of the surrounding earthwork, may also belong to this phase, as indeed does the rearrangement of stones within the main, northeast-facing entrance to the enclosure.

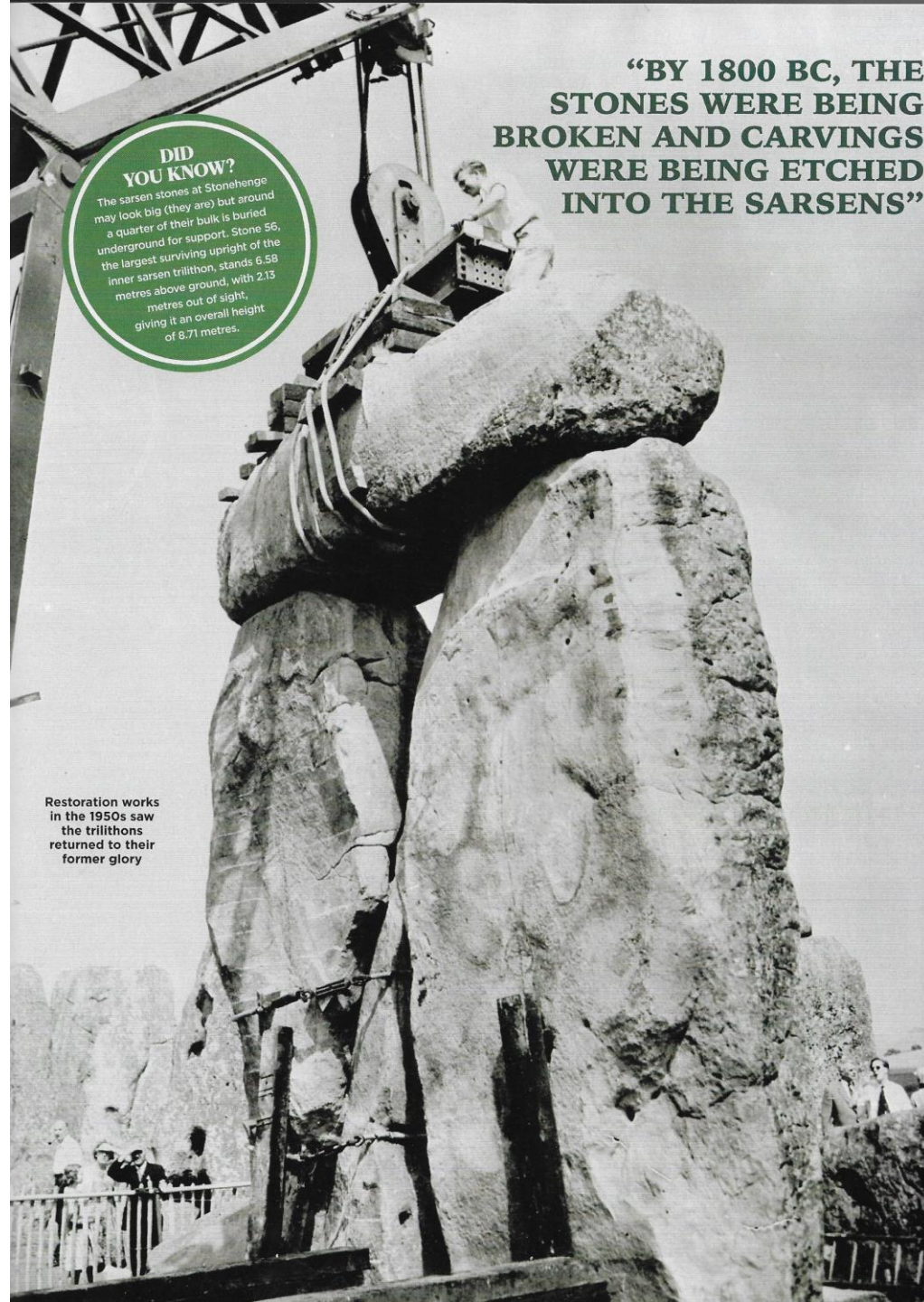
The third stage of modification came between 2400 and 2300 BC with the construction of the Avenue, the recutting of the main enclosure ditch, and the reorganisation of the entrance stones. Around 2200 BC, the bluestone circle was disassembled and rearranged into two oval settings, one inside the horseshoe of sarsens and one between this and the outer sarsen uprights.

By 1800 BC, the stones were being broken and carvings were being etched into the sarsens. At some point in the late- or post-Roman period, during the 4th or 5th century AD, the bluestones were again modified, but the full extent of this alteration is unknown.

LOSING COUNT

How many stones were used to build Stonehenge? We don't know for sure, as certain phases of the monument may never actually have been completed. If we assume that the outer ring of sarsens was finished, then it would have contained 30 uprights and 30 lintels. Add to this the five trilithons in the central horseshoe, that gives us 75 sarsens in total. Beyond the centre there are four additional

Continues on page 33



“BY 1800 BC, THE STONES WERE BEING BROKEN AND CARVINGS WERE BEING ETCHED INTO THE SARSENS”

DID YOU KNOW?

The sarsen stones at Stonehenge may look big (they are) but around a quarter of their bulk is buried underground for support. Stone 55, the largest surviving upright of the inner sarsen trilithon, stands 6.58 metres above ground, with 2.13 metres out of sight, giving it an overall height of 8.71 metres.

Restoration works in the 1950s saw the trilithons returned to their former glory

Bought on a whim

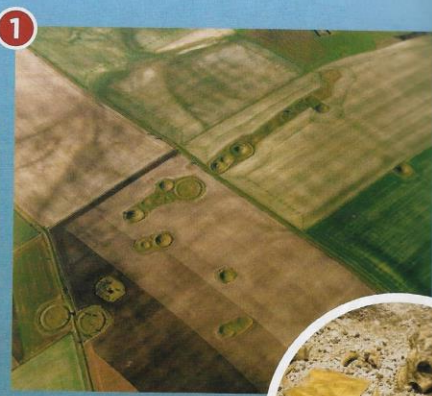
On 21 September 1915, Wiltshire businessman Cecil Chubb returned from an auction at Salisbury having bought an unusual gift for his wife's birthday. Mary Chubb had, by all accounts, asked for some chairs, but he returned with something larger and altogether more difficult to wrap. Stonehenge had been put up for sale following the death of its owner, Sir Edmund Antrobus and, although Chubb later claimed that his purchase had been 'on a whim', he may as a local landowner have feared that the monument was to be sold overseas (there were stories circulating that the stones were to be sent to America). Mary's reaction was, sadly, unrecorded. Stonehenge had not come cheap, being sold for the princely sum of £6,600 (around £700,000 in today's money). Chubb, who began the process of repairing the site, finally handed the stones over to the nation in 1918 and was given a knighthood in return.

Cecil and his wife Mary. He later said of his purchase, "I thought a Salisbury man ought to buy it, and that is how it was done."



The landscape

Stonehenge is only one prehistoric relic on Salisbury Plain. Close at hand, there are scores of smaller archaeological sites – burial mounds, hill forts, standing stones, earthworks and more. Today, Stonehenge is managed as part of a 2,600-hectare UNESCO World Heritage Site, with a second nearby encompassing the henge at Avebury. These are some of the remarkable remains from the Neolithic in the vicinity of this most famous of monuments.



NORMANTON DOWN BARROWS

▲ Of the hundreds of Early Bronze Age round barrows (dating to 2000-1600 BC) close to Stonehenge, the most famous is the Bush Barrow on Normanton Down. Excavated in 1908, it was found to cover the skeleton of a man accompanied by a bronze axe, three bronze daggers, a stone mace, a gold belt fitting and two hexagonal gold lozenges.



DURRINGTON WALLS

▲ This massive earthwork, enclosing over 500 metres, straddles a valley overlooking the river Avon. Constructed around 2500 BC, the purpose of Durrington Walls remains unclear. Excavations have revealed at least two timber circles from the interior, and a series of small rectangular wooden houses. The site may have served as the settlement for those using or building Stonehenge.



ROBIN HOOD'S BALL

▲ This oval earthwork has nothing to do with the mythic Sherwood Forester. It was built in the Early Neolithic period, sometime between 4000 and 3600 BC. Known as a 'causewayed enclosure' due to the discontinuous nature of its ditches, it represents the earliest piece of land modification on Salisbury Plain and probably functioned as an anchor point or seasonal settlement for farmers. In 2016, a second causewayed enclosure was discovered nearby.



THE CURSUS

▲ The Cursus, an east-west earthwork measuring 100 metres by 2.7 kilometres, was built after 3500 BC. Recorded by the 18th-century antiquarian William Stukeley, it was first thought to be a Roman-era racing track for chariots. We now know it to have been raised in the Neolithic period, but are not sure of its purpose. It's possible it may have had a ceremonial or processional use.

THE AVENUE

◀ The ceremonial approach to Stonehenge was marked, around 2200 BC, by the creation of the Avenue. This linear path, on average 12 metres wide, was originally framed by earth banks. With the removal of the A344 in 2013, it has been possible to trace the Avenue for most of its route from Stonehenge to the River Avon, 2.7 kilometres to the east.

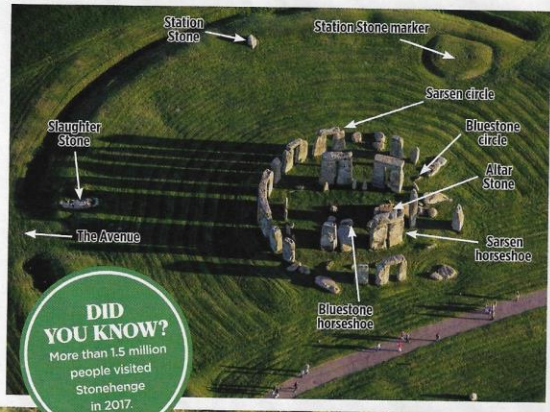


WOODHENGE

◀ This roughly circular, internally ditched earthwork once enclosed 168 large timber posts arranged in six concentric oval rings. The first posts were raised in 2300 BC around the skeleton of a child, possibly sacrificed as a foundation deposit. The bank and ditch, dug as the circle was abandoned, had a single entrance facing northeast, approximately towards the midsummer sunrise.

THE MONUMENT TODAY

Not all of the stones from the original monument have survived to the present, and not all of those that do remain are still standing



DID YOU KNOW?
More than 1.5 million people visited Stonehenge in 2017.

sarsens standing today, but there are recorded holes, for those moved or taken away, for at least another ten.

In addition to the sarsens, there is the large sandstone monolith (now fallen) known as the Altar Stone, and an unknown number of bluestones. The outer circle of bluestones may originally have contained 60 uprights, although there is only certain evidence for 28 and, of those, only seven are still standing. The inner bluestone horseshoe may have contained 19, of which only six still stand. A conservative guess would suggest something in the region of 169 stones on the site at any one time.

Geologically speaking, two discrete sources can be identified for the stones used in the construction of Stonehenge. The most impressive uprights, the sarsens, were sourced locally, possibly from somewhere near the Marlborough Downs, approximately 20 miles to the north. Here, naturally occurring sarsen can still be found and, although none are today as big as those recorded from Stonehenge, it was probably from here that they were originally dug out of the ground – quite an effort considering most weigh between 30 and 40 tonnes.

From Marlborough, it is likely that the roughly shaped blocks were transported across the undulating landscape of Wiltshire to their resting place on Salisbury Plain. Quite how this was achieved, given the technology and resources available to Neolithic people, continues to perplex, intrigue and annoy academics to this day.

The smaller bluestone (dolerite and andesite) pillars are of volcanic and igneous origin. The most likely source



Carn Menyn – also known as Butter Rock – is thought to be one of the main sources of the bluestones at Stonehenge

of them are outcrops in the Preseli Hills in Pembrokeshire, 155 miles to the west, where recent archaeological work suggests the presence of prehistoric quarries. It is possible that the stones were cut direct to order; alternatively, they may have been part of a Welsh stone circle, moved wholesale to Salisbury Plain.

MOVING AND BUILDING

Whatever the case, transporting them across land and water would have caused significant logistical problems. One must ask: why did Neolithic farmers chose such a distant source for their stone? It could be that the spotted nature of the dolerite was prized by those living on the more colour-deficient chalk landscapes of southern England, or that the stones were thought be special, with magical or healing properties. It wasn't

“PICKS MADE OF ANTLER WERE USED TO DIG HOLES IN THE SOLID CHALK”

just the bluestone that was moved some distance: the large Altar Stone is of a red sandstone peculiar to southern Wales.

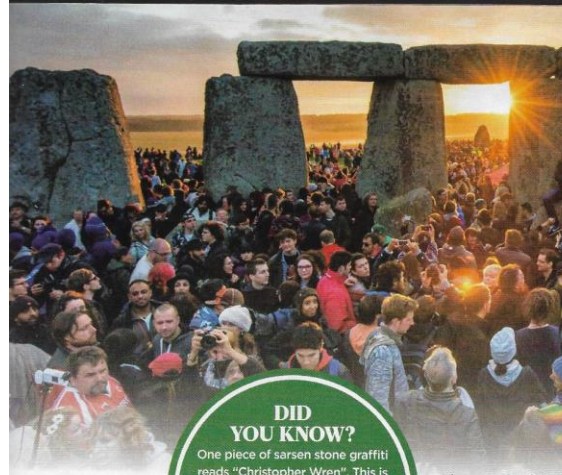
Transporting the stones to Salisbury Plain was one thing, but once there they had to be shaped, lifted and put securely into place. Using stone mauls, the rough blocks were pounded into shape, a process that must have taken months, leaving working debris across the site. Picks made of antler and axes of stone were then used to dig holes in the solid chalk, into the which the finished sarsens could be lowered into place through a combination of ramps, platforms, sledges, rope and muscle power.

With the uprights packed securely into place, the sarsen lintels were lifted up onto them – possibly with earthen ramps, timber scaffolding, and a series of levers and counterweights. To help secure them, mortise holes were cut into the lintels, which were then dropped neatly onto tenons carved into the tops of the uprights.

We can only guess at how many people were involved in this Herculean task and how the labour was organised. Apart from those engaged in the day-to-day effort of quarrying, shifting, transporting, shaping and lifting the stones, many more were needed to ensure an adequate supply of food, drink, timber, fire and shelter. Many generations must have toiled endlessly in the construction process without ever seeing their work come to fruition.

WHAT DOES IT MEAN?

Stone circles started appearing in the British Isles from at least 2800 BC, in the final stages of the Neolithic period, although circles in wood may have been



DID YOU KNOW?
One piece of sarsen stone graffiti reads “Christopher Wren”. This is very probably the same Wren who, as a professional architect, is famed for St Paul’s Cathedral. He was born in the village of East Knoyle, 20 miles from Stonehenge, in 1632.

Thousands visit the monument for the summer solstice, one of the few occasions that the public can access the stones

constructed slightly earlier, perhaps just before 3000 BC. By 2500 BC, the practice of erecting stone and timber circles appears to have been fairly widespread across Britain, the majority being relatively modest in size, measuring on average between 20 and 30 metres in diameter. Most sites have distinct entrances, sometimes marked with outlying stones set at a distance from the main circle. These outliers probably served as a form of focusing device, like a gunsight, guiding views out from the circle to a particular landscape feature or horizon point beyond, or as a marker, pointing people towards the monument.

Of all the known prehistoric circles, Stonehenge, with its well-faced sarsens and lintels, is by far the most impressive architecturally. The final phase of the monument has the appearance of an unfinished roundhouse: the upright sarsen circle, with its horizontal lintels, looking like the ring beam or inner support for a thatched, conical roof. Stonehenge could be taken as the monumental recreation of an unfinished house with the sky acting as its canopy.

Despite all the claims made for astronomical alignments at Stonehenge, it is clear that there is only one key axis to the monument. At midwinter, the shortest day of the year, the setting Sun disappears into the narrow gap between, and directly behind, the uprights of the tallest trilithon in the central horseshoe setting of sarsens. This time of year was critical to early farmers, arguably more so than the midsummer sunrise which is celebrated by visitors today. For the Neolithic people, midwinter was a point at which the Sun was at its weakest; a time of uncertainty and perhaps dread.

Unsure whether the Sun, and the bounty of the Earth, would return, most ancient cultures marked this time with feasting, prayers or partying, in the hope that the Sun would eventually be reborn. It is the essence of the Roman Saturnalia and Norse Yule. The many devotees who attend Stonehenge on the solstice should visit on a cold afternoon in December, rather than a misty morning in June.

Archaeological excavation often raises more questions than it is able to answer, and there are so many mysteries that remain unresolved. Why was Stonehenge built on this particular piece of Salisbury Plain? What was the precise sequence of construction? Where, exactly, did the stones come from and how were they transported to site? Was the monument ever really finished? When did building work begin and when precisely did it end? What happened to Stonehenge in the later Iron Age, Roman and Early Medieval periods?

New techniques of archaeological examination and recording will help shed light on the nature of the structure and of the people who built it and lived within its shadow. Despite this, an air of mystery will undoubtedly always surround Stonehenge, for we will never know everything. That is a major part of the site’s appeal. ☺

WHAT DO YOU THINK?
What was the true purpose of Stonehenge? Was it an elaborate cemetery, or was there more to it?
Email: editor@historyrevealed.com

The big threats

THE MILITARY

Salisbury Plain has been a training ground for more than a century. Today the army is mindful of the monument, but it was not always so. Mine tests during World War I, together with tank and artillery firing practice, caused some stones to move and fracture. Then came the arrival of the Royal Flying Corps in 1917, whose aircraft skimmed the tops of the lintels as they came in to land.



Pilots honed their skills at Stonehenge even before WWI – this image is from 1910

HANDS-ON TOURISTS

Until the late 19th century, visitors regularly chipped off pieces to take home and engraved their initials into the monument. Campers set up within the circle, digging fire pits that undermined the stability of the stones.

HUMAN-MADE EYESORES

Unrestricted access to the interior of Stonehenge in the mid-20th century resulted in significant erosion and an increase in picnic-related litter. Fences, paths and custodians’ huts helped to reduce the damage, but added unsightly new elements. The removal of a car park and the huts, and moving the visitor centre, has started to bring a more ‘natural’ feel to the site.

FESTIVALGOERS

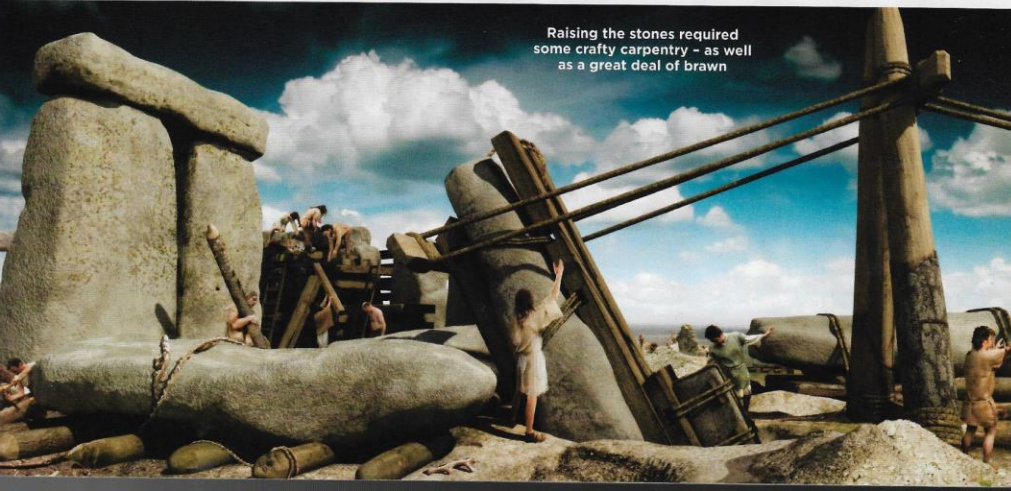
The Stonehenge Free Festival, timed to coincide with the summer solstice, brought thousands to Salisbury Plain in the 1970s and 1980s, causing significant damage to the landscape. It came to an end in 1985 after the so-called Battle of the Beanfield, in which riot police prevented travellers from entering Stonehenge to set up the festival.

INCREASING TRAFFIC

To the north, the A344 passed within a few metres of the site, whilst the A303 – a main route between London and several popular holiday destinations – is close by to the south. Together, they generated ground vibration. The removal of the A344 has reduced the threat, although the A303 remains.



Plans to hide part of the A303 by replacing it with a tunnel is mired in controversy – though it would make the road less of an eyesore, there are fears a subterranean route would damage a number of important sites



Raising the stones required some crafty carpentry – as well as a great deal of brawn