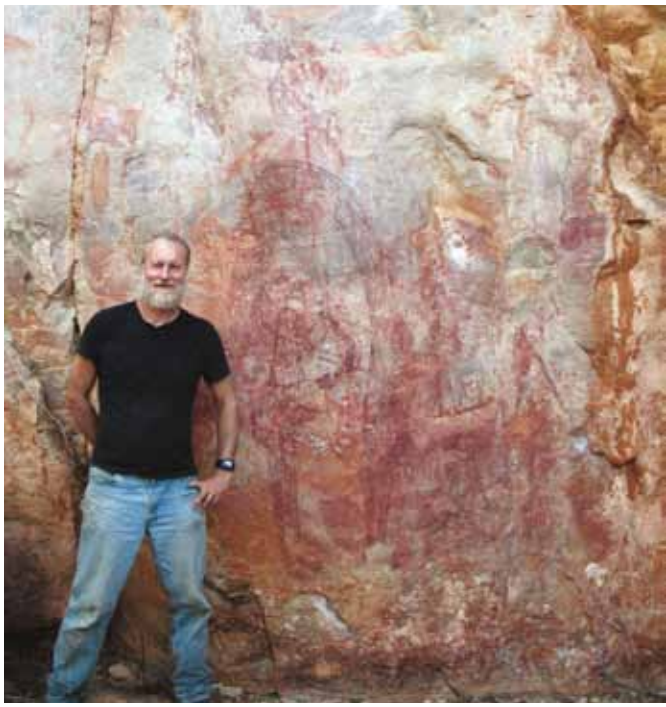
WORLD NEWS



PHOTOS: Paul Taçon

Australia's rock art threatened

Half of Australia's rock art could disappear in the next 50 years, according to the country's archaeologists. They have mounted a campaign to raise awareness of the outstanding quality of the nation's indigenous rock art, which is now under threat.

Rock art is exposed to many natural hazards, such as wind and rain erosion, bushfires, and animals rubbing themselves against the rock face; but other threats include the deliberate bulldozing of rock art that stands in the way of housing, mining or industrial development, vandalism, graffiti, acid rain, and even theft – particularly fine examples have simply been carved out of the rock by art thieves.

Paul Taçon, Professor of Anthropology and Archaeology at Griffith University in Queensland, says that part of the problem is simple ignorance on the part of Australians about the quality and antiquity of the art. He hopes raising awareness will instil in Australians the same sense of national pride that the French feel for their prehistoric cave art; he argues that South Africa offers another model, where 'they too had a European colonial system, but everyone in South Africa values their rock-art heritage'.

Taçon and his colleagues say that rock-art research, conservation, and management is currently carried out on an *ad hoc* basis and needs organising, because important sites are being lost through lack of knowledge. Those that are most at risk need to be identified, and campaigners hope to raise A$6m to create a national rock-art register. This sum is no more, they say, than was spent by the Art Gallery of New South Wales to buy one painting by Sir Sydney Nolan in 2010; in return, many of the more than 100,000 rock-art sites can be documented and scanned using 3D digital imaging, and hundreds of thousands of works of art could be saved.

Stratified and dated finds of ochre, one of the pigments used in rock art, suggest that Aboriginal people began producing rock art shortly after arriving in the continent some 50,000 years ago. So far, the oldest dated examples found were made around 15,000 years ago, but rock art continued to be created until about 20 years ago. It depicts

ABOVE These are special places, part of the Australian identity, argues Paul Taçon, pictured during field research in Arnhem Land.
ABOVE RIGHT This powerful image probably represents a Barramundi fish, also known as the Asian Seabass.
ABOVE FAR RIGHT Art from the 'contact period' depicts ships, bicycles, and aeroplanes, as well as people in Western dress.
BELOW LEFT Images of women in Kakadu National Park, internationally renowned as an area rich in outstanding examples of Aboriginal rock art.

long-extinct animals, and also offers striking illustrations of sailing ships and aeroplanes dating from the 'contact period', after Europeans first began to arrive. The powerful images document the ways in which Aboriginal Australians have lived, hunted, celebrated, and worshipped over many millennia.

Professor Taçon laments the fact that many Aboriginal communities struggle to get funding to look after rock-art sites, and that generations of Australians have failed to appreciate the richness of Aboriginal rock art. 'We want to raise awareness that these are important, special places,' he says, 'part of the national identity.' More than that, argues Alistair Paterson, Archaeology Professor at the University of Western Australia: 'This art is globally significant, because modern humans arrived in Australia earlier than they got to Europe, and this art tells the incredible story of how they dealt with the landscape they found.' •

LION GATE DISCOVERED IN TURKEY

A superbly carved and intact lion sculpture, excavated by a Canadian team in south-eastern Turkey, is reminiscent of the lions excavated by British archaeologist Sir Leonard Woolley in 1911 at the royal Hittite city of Carchemish.

This lion was unearthed from the remains of a monumental gate complex at the entrance to the citadel of ancient Kunulua (modern Tayinat), capital of the Neo-Hittite Kingdom of Patina. It probably dates from between 950 and 725 BC.

Professor Timothy Harrison, leader of the University of Toronto's archaeological project in the Tayinat region of south-eastern Turkey, said: 'The lion is fully intact, approximately 1.3m in height and 1.6m in length. It is poised in a seated position, with ears back, claws extended, and roaring'. He added that a second piece found nearby depicted a human figure flanked by lions, 'an iconic Near Eastern cultural motif known as the Master and Animals that symbolises the imposition of civilised order over the chaotic forces of the natural world'.

The find gives new insight into the cultural sophistication of the Iron Age city-states that emerged in the eastern Mediterranean following the collapse of the great Bronze Age powers at the end of the 2nd millennium BC. Such carvings on citadel gateways continued a Bronze Age tradition that accentuated the symbolic role of sphinxes and lions as guardians, and the role of the king as the divinely appointed gatekeeper to the community. 'Such elaborately decorated gateways served as dynastic parades, legitimising the power of the ruling elite,' says Harrison. •

PHOTO: Jennifer Jackson; Lynn Welton

LEFT The lion being transported to Antakya Archaeological Museum.

BELOW The stone lion sculpture that adorned the Kunulua citadel gate.

PHOTOS: Jennifer Jackson; Lynn Welton

LEFT Cave art, here from the famous caves at Lascaux, shows advanced social and cultural development.

ABOVE & RIGHT Paleolithic rock art from the caves at Font-de-Gaume, in the Dordogne.

The demise of Neanderthals

A paper by Paul Mellars and Jennifer French, published in *Science*, contributes to the widely debated question of why European Neanderthals were replaced by modern human populations from Africa between 45,000 and 35,000 years ago. Mellars and French point to a population explosion among modern humans in the Aquitaine region of south-western France, with a tenfold increase in population density during that period. If that finding is typical of the whole of Europe, numerical supremacy would have resulted in direct competition for resources, with modern humans winning through their better survival tactics.

Aquitaine – centred on the Dordogne, with its world-renowned cave art – was chosen as the study area because it contains the highest density of Neanderthal and early modern human sites recorded in Europe. A simple increase over time in the number of occupied sites was ruled out as the main indicator of population growth, as this could simply reflect changing patterns of mobility. Instead, density of occupation was chosen as a proxy for population size, as measured by the quantity and weight of retouched stone tools and associated animal food remains found at each site.

The authors say that the precise technological, economic, biological, social, and other adaptive mechanisms that led to a rapid growth in populations of *Homo sapiens* are still a matter of debate, but they are likely to have included improved hunting, food-processing and food-storage technology, as well as increased social integration that involved mating and alliance networks between different groups. They add that the proliferation of symbolic, artistic, and ceremonial practices suggest enhanced planning capacities and developed social relationships.

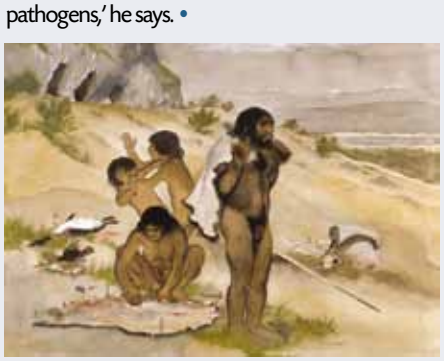
A range of climatic and associated environmental factors could also have played a critical role in the demographic replacement and extinction process – above all, the sudden climatic cooling associated with Heinrich event 4 (named after the German climatologist Hartmut Heinrich) in the oceanic records that occurred around 40,000 years ago. •

INTERBREEDING AND IMMUNITY

Meanwhile, another paper in *Science* argues that modern humans gained significant health benefits from interbreeding with Neanderthals. Scientists last year suggested that interbreeding had taken place between 90,000 and 65,000 years ago in western or central Asia, and that all of the world's non-African populations owed up to 4 per cent of their genome to Neanderthals. Peter Parham, Professor of Immunology at Stanford Medical School, in California, now argues that what we gained from Neanderthals was a 'ready-mixed cocktail of disease-resistant genes'. These are responsible for the functioning of our immune system, in particular a group known as the HLA class I genes, which govern the body's ability to recognise and destroy dangerous pathogens.

Matt Pope, of the Institute of Archaeology in London, specialises in Neanderthal research. He says: 'rather than having to evolve disease resistance from scratch as they moved out of Africa and into Asia and Europe, this interaction provided humans with a fast track to adapting to new environments.'

The downside, says Professor Paul Norman, co-author of the paper, is that the same gene group can trigger autoimmune disease, when the body mistakes its own tissues as foreign and potentially dangerous. 'It looks to me like modern humans acquired these genes, but were not prepared for them; we had not grown up with them, and in some circumstances, they can start to attack us as well as viruses and other pathogens,' he says. •



LEFT An artist's impression of Neanderthal domesticity.

ILLUSTRATION: Natural History Museum

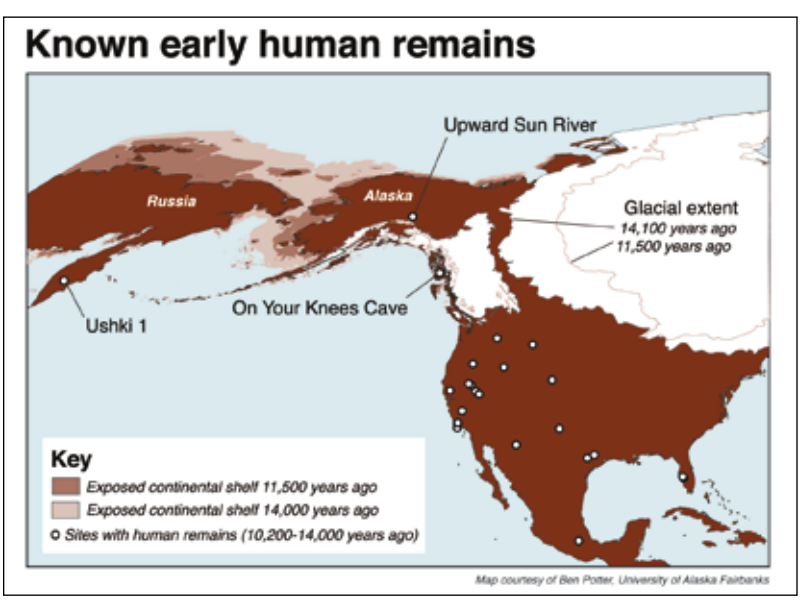
Oldest subarctic North American human remains found

In Alaska, the cremated remains have been found of a three-year-old child who might have been one of the earliest inhabitants of North America to arrive via the land route. University of Alaska Fairbanks archaeologist Ben Potter and four colleagues found the remains while excavating a fire pit within an ancient dwelling at the Upward Sun River site, near the Tanana River in central Alaska. Radiocarbon dating of wood at the site indicates the cremation took place roughly 11,500 years ago, when the Bering Land Bridge may still have connected Alaska and Asia.

The child's remains were found in the uppermost part of the pit, above the remains of small mammals, birds, fish, and plants. The researchers believe that the pit was originally used for cooking and as a means of disposing of food debris for several weeks or months before being used as a cremation pit after the death of the child. The remains of the child were then covered over and the house abandoned.

The house floor was dug about 27cm below the original ground surface; stains in the sediment suggest that poles may have been used to support the walls or roof, though it is not clear what the latter were made from, and the house has yet to be fully excavated, so its total size is still unknown. The oval-shaped pit was about 45cm deep and the identifiable food bones include salmon, ground squirrel, and ptarmigan. Buried with the child were two pieces of red ochre, the significance of which is unclear. •

BELOW LEFT Fragments of cremated bone from the Upward Sun River site in Alaska, photographed.
BOTTOM LEFT Excavating the burial pit at the Upward Sun River site.
BOTTOM RIGHT Members of the excavation team at work at the Upward Sun River site.
BELOW A map indicating sites in Russia and North America with human remains from the period 10,200 to 14,000 years ago.



PHOTOS & ILLUSTRATION: Maureen McCombs, Ben Potter

Viking victims of climate change

The cause of the sudden collapse in AD 1350 of the Viking settlement established in Western Greenland by Eric the Red in AD 985 has long been debated. Studying marine sediments in the same area of Greenland to reconstruct climate change over the last 1,500 years, Dr Sofia Ribeiro from the University of Copenhagen now believes she has the answer. 'Our study,' she says, 'indicates that at the time the Norse arrived in West Greenland, climate conditions were relatively mild and were favourable to the settlers.' But their descendants failed to adapt to declining temperatures and a rise in sea-ice, leading to the collapse of the centuries-old colony.

'Our study shows a major shift towards cooler conditions and extensive sea-ice, which coincides with the estimated time for the collapse of the Western Settlement in AD 1350,' said Dr Ribeiro. 'We cannot attribute the end of the Norse civilisation to a single factor, but there is enough evidence to suggest that these temperature shifts would have caused significant problems for the colonists and their livestock. Harsh climate conditions made farming and cattle production increasingly difficult and the extensive sea-ice prevented navigation and trading with Europe.' •

ARE THE LEWIS CHESSMEN FROM ICELAND?

Scandinavian and British experts meeting at an academic conference in Reykjavík have been debating the origin of the 12th-century Lewis Chessmen, a hoard of walrus ivory gaming pieces found in 1831 on Scotland's Isle of Lewis, one of the most significant archaeological discoveries ever made in Scotland.

The British Museum, which subsequently acquired 82 of the 93 figures, has recently loaned them to National Museums Scotland for a series of a 'homecoming' exhibitions that have stimulated a new wave of research into the origin of the chessmen.

One assumption being challenged is the question of where they were made. Norway has always been the favoured place of origin because of stylistic similarities between the Lewis gaming pieces and others known to have been made in Trondheim. This theory has now been upset by the finding in July 2010 of a chess figure at

Captain Smith's pots: the first English ceramics in America

A well shaft that was dug by the first English colonists at Jamestown when they arrived in May 1607 was backfilled in June 1610 because the water had become increasingly salty. The rubbish that went into the well, as part of a clean-up of the triangular fortified site ordered by the English governor, Lord De La Warr, has proved to be a rich source of information four centuries later about the pots that the founders of English America took with them.

Beverly Straube, who has just published a study of the pottery from the well in *This Blessed Plot* (Paul Holberton Publishing, 2011), says the pottery tells us what Captain John Smith and his co-colonists considered essential to meet their needs when they set sail from Blackwall, in east London, bound for a distant land, the equivalent to a trip to the moon in the modern age.

Sponsorship, it seems, was practised even then, and the bias in the assemblage towards pottery made in London and Essex reflects the keenness with which London tradesmen pressed their goods on the Virginia Company ships, as Smith himself recorded in his account of the voyage. From the Midlands of England came a large number of butter pots, designed to keep butter packed in salt from going rancid; butter, eaten with bread and used for cooking, was typically taken on long-distance voyages at the time as a source of fat and as an appetite suppressant. From south-west England came the tall baluster jars that served as containers for salted and pickled fish, the source of protein on long voyages.

At least some of the earthenware storage jars would have contained cider, often preferred for long voyages over beer because of its keeping qualities. Three-footed cooking pots designed to stand over the hot coals of a hearth to cook potages and stews came in a variety of sizes, from large vessels for communal cooking to smaller individual portion vessels. Ambitiously, the ceramics also included flasks of a type used in refining precious metals, a reflection of the belief that gold lay in abundance at the western side of the Atlantic. None showed evidence of use.

PHOTO: Jamestown Rediscovery Project

LEFT Three storage jars found in the James Fort well, along with two scorifiers, shallow dishes used in the testing of metal ores.

Siglufjordur, on the north coast of Iceland. This figure, of similar style and date to the Lewis pieces, was probably made in the known historic Viking craft workshop at Skálholt near Reykjavík in the 12th or 13th century.

Icelandic scholar Gudmundur Thórarinsson has gone further still, claiming that the 800-year-old Lewis Chessmen were carved by the same craftsmen. He points not only to stylistic similarities with the Lewis chess pieces, but also to the fact that Iceland at the time was colonised by Norse-Gaels from the Western Isles of Scotland, establishing regular trade links between Iceland, Scotland, and Norway.

His main argument rests on the claim that the use of bishops in chess originates in Iceland, and that contemporary chess sets in Norway use figures called 'runners' or 'messengers' in place of bishops. If he is correct, then renewed interest will focus on the Skálholt workshop, founded by Bishop Páll Jónsson (1155-1211), the ruins of which, along with its waste heaps, have never been excavated.

ABOVE & LEFT Long thought to have been made in Norway, the Lewis Chessmen may be the work of artisans from Skálholt in Iceland.