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1st Century BC/AD. H. 65.5 cm. (25 3/4 in.)


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EDITORIAL

The Present Past

On 3 May the world awoke to yet another natural disaster of cataclysmic proportion: Cyclone Nargis, which ravaged the Irrawaddy region of Myanmar (Burma), brutally killing an estimated 100,000 people and leaving 2.5 million homeless, and in peril from disease, starvation, and water shortage. The impact of this tragic event was of such a magnitude that satellite images have revealed the landscape has been permanently reshaped. Inevitably this catastrophe will be regarded as an unprecedented phenomenon and linked with global warming. In a similar vein, other most topical issues affecting the modern world - ethnic cleansing in Darfur, rising sea levels, AIDS pandemic, globalisation of the economy - prompt the daily response 'What is the world coming to?' The astonishing truth is that the world has seen it all before.

Just nine days after the Myanmar catastrophe, a powerful earthquake measuring 8 on the Richter Scale struck Sichuan province in China. As we go to press the news has become increasingly bleak, with an estimated 70,000 dead, 300,000 injured, and five million homeless. As topical as this cataclysm may be, historians of antiquity penned many descriptions of such episodes: from the eye-witness accounts of Pliny the Younger, who described in graphic detail the great earthquake and volcanic destruction of Pompeii in AD 79, to the more obscure writings of the Byzantine court historian Procopius in the mid 6th-century AD. In light of the depressing circumstances in Sichuan Province, his account is especially poignant: "Earthquakes destroyed Antioch, the leading city of the East; Seleucia, which is situated nearby; and Anazarbus, most renowned city in Cilicia (modern Turkey). Who could number those that perished in these metropoles? Yet one must add also those who lived in Iberia; in Armenia, the chief city of Pontus (southern Black Sea); in Polybotus in Phrygia... in Lychnidus in Epirus (Albania); and in Corinth (Greece); all thickly inhabited cities from of old. All of these were destroyed by earthquakes during this time, with a loss of almost all their inhabitants."

Arguably the greatest natural disaster in modern history, the 2006 Asian Tsunami is understandably regarded as an unparalleled event, leaving nearly 230,000 people dead or missing, and another two million homeless. Roman historical texts in fact reveal that tsunamis were an unwelcome feature of the ancient world. One of the best accounts of a tsunami is recorded by the Roman historian Ammianus Marcellinus in AD 365. This was caused by an undersea earthquake with an epicentre near Crete and an estimated magnitude of 8 or higher on the Richter Scale, causing widespread destruction in Greece, Libya, Cyprus, and Sicily, killing up to one million people. Marcellinus records: 'The solidity of the whole earth was made to shake and shudder, and the sea was driven away... Many ships, then, were stranded as if on dry land, and people wandered at will about the paltry remains of the waters to collect fish and the like in their hands; then the roaring sea as if insulted by its repulse rises back in turn... the mass of waters returning when least expected killed many thousands by drowning... huge ships, thrust out by the mad blasts, pitched on the roofs of houses... and others were hurled nearly two miles from the shore..."
According to Avert, the International AIDS charity, an estimated 33.2 million people were living with HIV/AIDS at the end of 2007 with 2.1 million deaths. The world is, however, no stranger to disease. In 2005, archaeologists from Oxford Archaeology made the gruesome discovery of a mass Roman grave in Gloucester containing the remains of at least 91 skeletons. It is thought that the cause of death may have been the Antonine plague, an outbreak of smallpox that swept across the Roman Empire from AD 165-169.

Recent analysis has demonstrated that the remains were of individuals who had been thrown into the grave over a short period of time during the late 2nd or early 3rd century AD. Louise Loe, Head of Burial Archaeology at Oxford Archaeology, has informed Minerva that ‘The skeletons of adults, males, females, and children were lying in a very haphazard fashion, their bones completely entangled, reflecting the fact that they had been dumped, unceremoniously in a hurried manner.’ This has led us to conclude that the individuals were the victims of an epidemic that did not discriminate against age or sex.

Earlier this year, the remains of hundreds of victims, believed to have been killed in a plague that swept Italy 1500 years ago, have been found south of Rome. The bodies of men, women, and children were found in Castro dei Volsci, in the region of Lazio, during excavations carried out by Lazio archaeological office. The individuals are believed to have been victims of the Justinianic Plague, a pandemic that killed as many as 100 million people around the world during a 50-year period in the 6th century AD. It spread through Europe as far as Denmark and Ireland. Surprisingly, this discovery is the first evidence of the devastating impact of the plague, which swept across the Mediterranean during the reign of Byzantine Emperor Justinian I in the early 540s. According to some historians this episode changed the course of European history; subsequently the Empire entered a period of decline.

Global warming is without question the biggest issue threatening humanity in the modern era and for this reason is justifiably the most topical issue in the media and among the public. According to the influential Intergovernmental Panel on Climate Change (IPCC), the average global air temperature near the Earth’s surface increased 0.74 ± 0.18 °C during the 100 years ending in 2005, and the average global surface temperature is likely to rise a further 1.1 to 6.4 °C during the 21st century. The IPCC has concluded that ‘most of the observed increase in globally averaged temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic (man-made) greenhouse gas concentrations.’ They envisage that increasing global temperature will cause the sea level to rise, the intensity of extreme weather events to increase, a change in the amount and pattern of precipitation, changes in agricultural yields, trade routes, glacier retreat, species extinctions, and increased disease effects.

While it is essential to take heed of these predictions in an attempt to prevent them, it is worth considering that our planet has witnessed sustained fluctuations in temperature and sea level over millions of years. Tangible evidence for this is provided by the raised beaches on the Gower Peninsula, Wales, caused by the Ipswichian Inter-glacial, a warming phase which began 135,000 years ago and ended about 73,000 years ago. During this phase of prehistoric global warming the sea level was about 7m higher than it is today. A combination of evidence from polar ice cores, alpine glaciers, and ancient tree ring sequences also paints a picture of radical climatic and sea level changes as far back as 800,000 years. Global populations were of course relatively sparse in prehistory compared with modern levels, but people were nonetheless forced to abandon their habitats or perish. These changes were not wrought by humanity, but by the changing orbit of the Earth around the Sun, the varying tilt of the Earth’s axis, and the wobble of the planet (the so-called Milankovitch cycles).

So what does this present past tell us? Above all, perhaps, that the planet can be as uncompromising as the people who populate it. Yes, the world has seen it all before; but the fundamental difference in the modern era is that natural disasters, disease, and climatic change are being exacerbated by humanity. It is of course the collective responsibility not just of governments, but of individuals, to do everything in their power to reduce carbon emissions. Only this will guarantee the survival of humanity and return the planet to what it was in the past: an ever changing world, but a more pleasant place to live.

Dr Jerome M. Eisenberg, Dr Mark Memony

EXCAVATION NEWS

Temple of the Pontic Mother Discovered at Balchik, Bulgaria

Recent construction work in the tourist resort of Balchik (ancient Dionysopolis) in Black Sea coastal Bulgaria unearthed the exciting discovery of a Greek temple. This is currently being excavated by a team from Varna Archaeological Museum under the direction of Dr Igor Lazarenko, and this programme of investigation has yielded an impressive monument and associated finds.

The temple, aligned on a north-south axis, is a rectangular structure measuring 11 by 8.5m, and comprises a naos (inner chamber), measuring 7.10 by 7.10m with a south entrance, and a pronaos (antechamber), 7.10 by 3m with a south facing entrance. In the entrance area the excavators uncovered a small enclosure containing an altar and a platform reached by three steps, marble benches, the remains of engaged fluted columns, an Ionian capital, and fragments of an Ionian entablature, and a pediment with the remnants of a bust in relief of the sun god Helios, characteristically with a radiant crown stood in his chariot between four horses. A fragmentary dedicatory inscription recovered in this area indicates, on stylistic grounds, that the temple was constructed around the middle of the 3rd century BC.

Adjacent to the platform area are the well-preserved remains of a large

The Altar area of the Temple of the Pontic Mother of Gods at Balchik in the initial phase of excavations. Photo: Igor Lazarenko.

Minerva, July/August 2008
The altar area after clearance with the small altar in the foreground and the lustral basin behind. Photo: Igor Lazarenko.

Below left: the naos area after partial clearance with the collapsed wall structures and a statue of the Pontic Cybele/Mother of the Gods. H. 90cm. Photo: Igor Lazarenko.

Below right: Cybele/Pontic Mother enthroned wearing a himation and chiton and with a small lion in her lap and a kettle-drum in her left hand. H. 55cm. Photo: Igor Lazarenko.

Left: the altar area after clearance with the small altar in the foreground and the lustral basin behind. Photo: Igor Lazarenko.

Some of the richest finds in the temple were the well-preserved statues in the naos. Most of these are representations of the goddess Cybele. Originally a Hittite and Phrygian goddess, Cybele was the Mother of Earth, worshipped since Neolithic times in Anatolia. In the same vein as Gaia (Earth) or her Minyan equivalent Rhea, Cybele embodies the fertile Earth, and was known in Ancient Greece by the title, Potnia Theron (Mistress of the Animals).

She became known as a life-death-rebirth deity in connection with her resurrection of her son and consort Attis; and is often associated with her lion throne and chariot drawn by lions. Curiously, inscriptions found in various locations within the temple precinct name her as Mater theon Pontia (Pontic Mother of the Gods), Mater Pontia (Mother of the Pont), Thea Pontia (Goddess of the Pont), and Mater kathare (Pure Mother). These may be taken as clear allusions to the goddess as Mother of the Gods and Mother of the Sea (Pontus/Black Sea).

A splendid marble representation of Cybele depicts her enthroned, wearing a chiton (cloak) and a himation (Greek version of a toga), caressing a small lion with the remnants of a kettle-drum in her left hand. By contrast, the principal deity in the naos is a life-size headless statue of Cybele clad in a long chiton with generous drapery flowing over her right shoulder down past her left hip. Collectively the evidence provided by these inscriptions and representations are explicit testimony that the temple was dedicated to a localized version of Cybele - Mother of the Gods and the Sea.

Interestingly, the inscriptions also provide a crucial social index of officials associated with the temple between the end of the 2nd century and beginning of the 1st century BC. Venerated citizens include the famous strategist Polyxenos from the Black Sea city of Messambria, and a dedication to Mokapporis from Thrace, appointed by King Remetacis I of Thrace as a Strategist, who helped defend Dionysopolis against the common enemy beyond the Danube. Also preserved is a register of 19 priests and officials of the cult of the Mother of Gods. Intriguingly, another register includes a list of 84 priests and clergy, members of a religious circle who met to celebrate the cult on the first day of every month; fascinating evidence for the continuity of the temple's association with Cybele through the Roman period.

The latest dedicatory inscription is engraved on the base of a silver statue restored by order of the emperor Licinius (r. AD 308-324). Evidence from roof-tile stamps indicates that the temp-
people was last refurbished in the reigns of Valentinian I (364-375) and Valens (364-378). Shortly afterwards the temple was destroyed by fire, almost certainly in the Gothic invasion of AD 378, rather than by officials in the Christian era. This assumption is supported by the well-preserved interior of the naos, which did not show any signs of desecration.

Dr Igor Lazarenko, curator, Varna Archaeological Museum, Bulgaria

Regress and Progress on Stonehenge

Jacquetta Hawkes famously wrote that ‘every generation gets the Stonehenge it deserves.’ The present fiasco over the World Heritage Site proves the truth of her comment. In September 1998, Chris Smith, then Secretary of State for Culture, Media and Sport, announced his intention to resolve the major problems that led Stonehenge to be described by the Public Accounts Committee of the House of Commons as a ‘national disgrace’ (see Minerva May/June 1999, pp. 22-25). His proposal was a ‘Master Plan’ that would provide ‘free access for everyone... that would combine the benefits of the A303 [trunk road] improvement with the conservation and enjoyment of the World Heritage Site... the reunification of Stonehenge which restores its dignity and its sense of isolation set amongst 450 Scheduled Ancient Monuments... and the protection of the archaeology forever.’

In December 2007 the Department for Transport announced that the A303 Stonehenge Improvement scheme had been scrapped because of its astronomical expense (5.40 million). This news is essentially a double-edged sword. On the one hand this will be welcomed by archaeologists and environmentalists who have been campaigning for over a decade for an improvement in the landscape around the monument; on the other, it will also be perceived as a tragedy: after many years of consultation and expectation about routing the A303 in a tunnel under the monument and providing a world class visitor centre the situation is now back at square one.

This is clearly not the case with the first major excavation of the monument for several decades. Most recently Professor Tim Darvill of Bournemouth University and Professor Geoffrey Wainwright, President of the Society of Antiquaries of London, have carried out a two-week dig funded by the BBC and filmed as a Timewatch programme to be broadcast in the autumn. A key objective is to find out more about the mysterious bluestones, transported 250km to Stonehenge from the Preseli Hills in Pembrokeshire. Professors Darvill and Wainwright believe that these lie at the heart of the mystery and that they were chosen for their healing powers, a factor that may explain the function of the monument.

The highlight of their endeavours was the excavation of a 3.5 by 2.5m trench in which they unearthed a layer containing the sockets for the bluestones in the first phase of the monument 4500 years ago. A particularly interesting find was the presence of many bluestone fragments which, according to Professor Darvill were ‘broken up pretty systematically... because people wanted bits of those stones to take away,’ a factor he believes to be compatible with his ‘healing’ theory. Another interesting aspect of the excavation was the discovery that the bluestone sockets were uncovered in an unexpected sequence, cut through and into each other in a way that suggests a much more fluid chronology of the monument’s construction than previously thought. The full significance of this exciting excavation will become clearer when the extracted samples of bluestone chippings, flint, pottery, bones, and other organic matter are analysed and interpreted. Concluding the dig, Professor Darvill believes this research ‘is going to fundamentally change perspectives on Stonehenge.’

Recently, as news began to filter through about this fascinating excavation, the Minerva offices were informed of a recent and remarkable interpretation of Stonehenge by Tony Johnson, a former colleague of the writer and one of the most experienced field archaeologists in Britain. His theory of the monument focuses on the inherent archaeological principles of the monument: how it was conceived and planned from a fixed mathematical proportion and precisely laid out geometrically - step-by-step - by prehistoric surveyors using cords and pegs. This new interpretation represents a refreshing departure from the scholarly fixation of Stonehenge’s perceived astrological function, and provides the most important step in understanding the Late Neolithic/Early Bronze Age mindset for a generation (see Minerva, this issue, pp. 35-38). If every generation gets the Stonehenge it deserves, then the excellent work of Professors Darvill and Wainwright and the inclusive interpretation of Tony Johnson will combine to ensure that future generations are spared the pain and tedium invited on archaeologists of this generation by the New Age fringe based on fallacy rather than hard archaeological evidence. Stonehenge, this most iconic of British monuments, deserves no less.

Dr Mark Moriarty

Monumental Equestrian Statue Found at the Colosseum

Just to demonstrate once again that archaeology in Rome is a never-ending process leading to extraordinary discoveries, a huge marble fragment of an over-lifesize equestrian statue was recently discovered near the Colosseum. The shallow excavation some 50cm below street level was begun in conjunction with the repair of the pavement around the Circus Maximus on the Celium side of the Colosseum. It is known that a 12th/13th century furnace existed in this location, used for making lime from ancient marble fragments. Amongst the remains of these fragments excavators discovered

Minerva, July/August 2008
MUSEUM NEWS

Heritage Lottery Fund Grant Takes 'Making History' on Tour

The Society of Antiquaries of London has recently announced the success of its Heritage Lottery Fund application with an award of almost £300,000. The grant will support a Touring Exhibition of the Society's historical collections built upon its widely acclaimed show 'Making History: Antiquaries in Britain 1707-2007' at the Royal Academy of Arts in autumn 2007 (see Minerva, May/June 2008, pp. 16-18).

The Touring Exhibition will, for the first time, enable public access outside London to one of the country's most important historical collections of paintings, drawings, prints, and artefacts. It will be hosted by four regional partner-museums across the UK, the Sunderland Museum and Winter Gardens, The Potteries Museum in Stoke-on-Trent, Salisbury and South-Wiltshire Museum, and The Collection: Art and Archaeology in Lincolnshire.

The project will involve local voluntary historical groups and individuals and underlines the Society's commitment to creating learning opportunities and increasing public access to its rich collections and resources. A virtual exhibition will be hosted on the Society's website.

The Exhibition's guest curator, Dr David Starkey, CBE, FSA, said, "I am delighted with this Heritage Lottery Fund Grant. The Grant recognises the Society as the pioneer of cultural heritage conservation and education; will help carry its work forward into its fourth century and, in particular, will make its unique treasures familiar to new audiences throughout the country."

Dr David Gaimster, FSA
General Secretary,
Society of Antiquaries of London

LETTER TO THE EDITOR

Dear Dr Eisenberg,

Thank you very much for the copy of Minerva with your most interesting article on the Monte Leone Chariot (July/August 2007). I apologise for not acknowledging it sooner, but I have only just got round to reading your paper with the full attention it deserves.

I found your arguments for thinking the main panels to be forgeries extremely convincing. Looking at your excellent photos in the light of them it struck me how ugly in many ways the panels were. Such aesthetic judgements are very personal and subjective, but I think always important. Another point which struck me was the too perfect condition of the panels, contrasting with the damage to the genuine decorative bronze work of the chariots. Damage, when it occurs, is also in places where it does not matter, such as the elbow of the figure on the right of the main panel.

The one occasion when I've entered this field of battle was in connection with the complete painted vases in the Ashmolean Museum alleged to be from Hacilar (south-western Turkey). I casually vented my doubts about one of them to a passing official of the museum who was a friend. The next thing that I knew was that I was put in a room with the vases and a group of pottery fragments, certainly genuine, from the excavations there. I must confess that I could not see any difference in the clay or firing between the vases and the fragments, but the late Roger Moorey, a very fine scholar and acute judge, who had been responsible for acquiring the vases for the Museum, already had his doubts about them. He sent them for tests to the excellent Art and Archaeology Laboratory founded by Tiddy Hall, Oxford, where they were found by thermoluminescence to be modern, that is, fired in recent times.

Forgery of antiquities has long been rampant. Where there is a market for things, they will inevitably appear to meet it, although it does not always work that way round. The two massive gold signet rings, the Ring of Nestor and that of Minos, which were published as genuine by Sir Arthur Evans, in my young days were almost invariably condemned as forgeries by those competent to judge, but they have since been rehabilitated, and many, if not most, competent judges appear now to accept them as genuine.

I think it is good when museums that have forgeries exhibit them, with a proper warning notice of course. I saw this many years ago, as a student, in the museum at Istanbul, the old Imperial Ottoman Museum. There was a large case near the entrance labelled, in red I think, and in English as well as Turkish, as forgeries: largely statuettes of some kind of white alabaster-like stone, said to be from somewhere in South Arabia. I remember being most impressed by this, and hope the new enlarged Ashmolean Museum may have room for such a feature for its more colourful forgeries or suspected forgeries. The Thiseus Treasure, with scenes of the Theseus legend, acquired by Sir Arthur Evans, springs to mind.

What a fine periodical Minerva is. With many thanks again for this interesting article, and all best wishes.

Sinclair Hood, FSA
Formerly Director, The British School at Athens

ANTiquITIES NEWS

China

Following a recent court ruling in Copenhagen, a shipment of about 156 works of art has now been returned to the Chinese State Administration of Cultural Heritage (SACH). These included a group of Tang Dynasty pottery figurines and other items dating from the Xia, Shang, Yuan, and Ming Dynasties, seized by Danish police in February 2006. The director of SACH, Shan Jixiang, is especially concerned about the recent appearance of murals from ancient tombs on the art market. These have been cut into pieces and smuggled abroad.

India

The government is planning to create a databank of India's cultural heritage due to the increasingly larger numbers of thefts from temples and museums. In 2005, 1012 cases of the theft of cultural property were reported. In 2006 this has increased to 1307 incidents with the greatest number reported from the states of Karnataka (404), formerly known as Mysore, and West Bengal (182).

Minerva, July/August 2008
Italy
A fine Roman marble head of emperor Lucius Verus, who co-ruled from AD 161 to 169 with Marcus Aurelius, his adopted co-emperor, was amongst more than 12 antiquities found in a raid on a boat garage near Rome. According to Captain Massimo Rossi of the Italian art theft squad, the Carabinieri, the head was illegally excavated from a site in the Naples area. In a separate operation, a marble head of Faustina Senior (d. AD 141), wife of the emperor Antoninus Pius, was returned to Italy. This occurred after an American collector was informed that it had been stolen from an ancient theatre in Minturno, south of Rome.

Libya
A Roman marble relief of Mercury, holding the reins of the four horses of a quadriga, was excavated in Shahat (ancient Cyrene) in 1973 and published soon after. Stolen in 1999 from an antiquities depot in Shahat, Gabal al Akhdar, in eastern Libya, it was returned to the Libyan authorities, through the efforts of Dr Eisenberg, during a ceremony held in Paris. It was originally sold by an antiquities dealer in Zurich, Switzerland, who was unaware of its origin.

Mexico
Some 100 antiquities, including an Olmec stone mask, c. 1000 BC, and several rare jadeite figurines, were finally returned to the Mexican government long after their initial seizure in 2001 in south Texas and New Mexico. US Customs officials explained that the long delay was due in part to the ‘authentication process’. It is equally surprising that apparently no charges have been filed against anyone concerning the smuggling of these objects.

Yemen
Two Italians and one French national were arrested this year in separate incidents on charges of smuggling a total of 80 antiquities out of Yemen, including bronze statuettes, stone reliefs, and ancient coins. All three had been working for foreign oil or gas companies. Authorities say that many of the objects were being smuggled through oil tankers or with people having diplomatic immunity. The Monuments office has recruited four personnel with archaeological backgrounds to identify sites that they believe are of archaeological importance. Some 171 sites have already been identified as containing cemeteries that date back as far as the prehistoric period.

Jerome M. Eisenberg, Ph.D.

NEWS FROM EGYPT

Fourth Century AD Christian Grotto Found in Sinai
A rock-hewn cave used by Christian followers or monks has been found by an Egyptian mission from the Supreme Council of Antiquities at Hammamat Pharaon ('Pharaoh's bath'), only about 25m from the first recently discovered cave, but dating about 100-200 years earlier. The plastered walls were covered with Greek characters in red paint as in the first cave, as well as a number of Byzantine-style crosses. In the central adjoining vaulted wall was a scene in 6th-7th century style depicting three figures praying: the Martyr St Menas, the 6th century Alexandrian Patriarch Iowanas, and Asnassios, Patriarch of Constantine's Church, all enclosed within Greek prayer texts.

Early Christian Church Found in Nubia
A Polish archaeological mission under the direction of Dr Bogdan Wygrzanka has uncovered the remains of an Early Christian church in Selib, a small village on the right bank of the Nile between the 4th and 3rd Cataracts. This is a circular building 8m in diameter constructed of red brick, surrounded by a large rectangular building. A stone reliquary, a section of the altar, and some oil lamps were found, confirming that the building was the remains of a church. One kilometre away, the mission also discovered the outline of a 900-square-metre building, thought to be one of the few known palaces of the Meroitic period, c. 300 BC - AD 350.

The Sphinx not under Threat from Rising Water Table
Following three months of ecological and geophysical studies, a scientific team has determined that the Sphinx and its bedrock are safe from the slowly rising water table and the accumulation of salt. This is being caused by the different irrigation techniques and the blocking of the nearby Al-Manshuriya canal. A master plan has been drawn up to reduce the level of the plateau's water table. It now stands 4.6m below ground level, approximately the same as in ancient times when a harbour was constructed to protect the boats carrying the huge pyramid blocks from the Aswan and Tura quarries.

Arish National Museum Opened in North Sinai
The new museum at Arish, inaugurated in March, has over 2000 objects on display, selected from eight major museums in Egypt, including Cairo's Egyptian, Coptic, and Islamic museums. Antiquities excavated at sites in North Sinai, such as the Horus military road and Tel Basta, are featured, as are a collection of weapons and models of early fortresses. A separate section is devoted to the Hyksos, who invaded from the east and introduced the horse into Egypt.

Jerome M. Eisenberg, Ph.D.
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Jerome M. Eisenberg

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THE PHAISTOS DISK:
A ONE HUNDRED-YEAR-OLD HOAX?

The 10th in a series of articles by the Editor-in-Chief of Minerva,
Jerome M. Eisenberg, Ph.D., dealing with the problems of forgery and ancient art.

INTRODUCTION
The Phaistos Disk (Figs 1, 2, 13, 14) is a small clay disk stamped with a series of unique 'hieroglyphs' purportedly excavated in July 1908 by Luigi Premoli in the palace of Phaistos on the island of Crete. It may not ever rank in the public's mind with the Pilltdown Man as an object of great renown in the field of man's attempt to fool both the public and countless numbers of scholars. However, its exposure as the most famous fabrication of an ancient script should certainly end the long-standing controversy over its origins and the translation of its intriguing hieroglyphs. On this 100th anniversary of its 'discovery', the writer hopes to bring to light its dubious origin.

One of the most fascinating aspects of the attempts to decipher the disk is its innumerable interpretations and those of the individual glyphs. In fact, eight additional pages have been added to this issue of Minerva in order to present a comprehensive listing of these decipherments and the various interpretations of the different signs. The interpretations of the script range from scholarly discussions of its relationship to ancient Greek scripts such as Proto-Ionian and, obviously, Minoan, to Anatolian (Hittite and Luwian), as well as often far-fetched links to Basque, Indo-European, Proto-Slavonic, Rhodian, Coptic, Semitic, Proto-Byzilic, Tatarish-Turkish, scripts from the Black Sea area (South Caucasian/Georgian, Kartvelian, Colchian, Mingrelian-Laz), and even West Finnish or Old Estonian, Indian, Chinese, and Polynesian.

Attributions have been made of the 'text' on the disk relating to deities and events in Greek mythology including Zeus and the Minotaur, Theseus and Ariadne, Dionysos, and Icarus in the Near East to the Hittites and Philistines; and in Egypt to Osiris and Isis, Thoth, and the pharaohs.

Over the past 100 years it has been interpreted variously as an adventure narrative, a poetic verse, a hymn, a prayer, a sacred text, a magic inscription – perhaps a curse, an aid-in-healing ritual, a funerary record, an almanac, or a calendar-diary. Others suggest an administrative document, a record of gifts made to a temple, a judi-
cial court list, a political treaty, a palace schedule, a palace site plan description, proof of a geometric theorem, a call to arms, a list of soldiers, or a text for teaching reading. It has also been interpreted by some as a board game or game of chance, even musical notes for a stringed instrument. Not to be outdone, a Russian scholar recently proposed it as a device for the manufacture of metal wares.

Pseudo-archaeology, or the unscientific, often fantastic, interpretation of ancient remains comes into play with many interpretations in the case of amateur archaeologists or historians of the disk's contents. They have suggested that it is a 'number-philosophical' document from Atlantis, a message from extraterrestrials, and even a portal or 'stargate' with which a wormhole (a theoretical connection in time or space) can be created to enable one to achieve teleportation to cosmic distances.

It would be very difficult to actually decipher the disk, if genuine, unless further texts with additional glyphs were discovered. Statistically it is too short and it does not provide enough clues as to its content. Also, if the writer is correct in his assessment of the disk as a 100-year-old forgery, it would be virtually impossible to provide a correct translation. Then, the only person who could disclose the 'meaning' of the glyphs is the one who invented them. The writer doubts that they actually represent any kind of text but that they were cleverly chosen to purposely confuse the scholarly world.

Background
The story of the disk begins with the excavations of the Italian archaeologists in Crete in the 1880s, led by the noted Federico Halbherr. He was most famous for his discovery in 1884 at Gortyna of the early 5th century BC 'Great Inscription' inscribed on the walls of the city's Odeum of the earliest legal code found in Europe. The long Greek text detailed the statutes for guilty individuals and the punishments for crimes. Halbherr, an epigraphist, concentrated on the study of ancient Greek inscriptions from 1884 to 1888 and was compiling a corpus of Cretan inscriptions with his mentor Domenico Comparetti. Later, Halbherr and his Italian colleagues, Roberto Paribeni, Andrea Savignoni, and especially Luigi Pernier, conducted excavations uncovering the Minoan palace complex of Phaistos, between 1900 and 1907.

Halbherr had often expressed his wish that written texts would be discovered at Phaistos. In 1900 he wrote that the excavation of the palace of Phaistos 'has produced some very lovely Mycenaean vases, terracotta figures...'. But in data handle the inscribed tablets, though we are hopeful that they will be found elsewhere.' At the same time, the renowned English archaologist (Sir) Arthur Evans (1851-1941), had already received much acclaim for his studies of the early hieroglyphic inscriptions on Cretan seals, and especially later on for his excavations of the site of the palace at Knossos. Evans visited Crete in 1894 to investigate the earliest pictographic script, or hieroglyphs, that appeared on Cretan seals (Fig. 3) and also the two other unknown scripts: Linear A (Fig. 4), c. 1750-1450 BC, and Linear B (Fig. 5), c. 1450-1375 BC. Just one year later Evans published his Cretan Pictographs and Pre-Phoenician Script. In it he called the Minoan 'hieroglyphs' 'pictographs' and Linear A and B 'Pre-Phoenician'. Later this small book would be expanded into his classic work Scripta Minoa (vol. 1, 1909; vol. 2, 1952).

In the opinion of the writer, Pernier was jealous of the success of Halbherr and Evans and decided to outdo them both by making a discovery that would astound the archaeological community. He had found nothing at Phaistos that could in any way surpass or even equal the amazing finds at Knossos by Evans, begun in 1900. By 1903 Evans had uncovered much of the foundations of the Palace (that he later famously over-reconstructed), in addition to the Throne Room, the wondrous frescoes, and the faience female figurines. Evans also found many Linear A and Linear B tablets during the course of his excavations at Knossos.

Inspiration for the Phaistos Disk
What could Pernier 'discover' to bring him fame and glory and to rival that of Halbherr and Evans? He soon came up with the answer - the creation of a relic with an untranslatable pictographic text - the Phaistos Disk. Evans was obviously quite excited about the discovery of the disk. In Scripta Minoa he published the preliminary details of the unearthing of the Phaistos Disk and a 21-page analysis based upon Pernier's publication of the disk in 1908: 'Il disco di Phaestos con caratteri pitografici in Annuale III, 255-302 (a 48-page study published in the same year of its discovery). It must be emphasised that forgeries are not just made for financial gain, but often to boost the reputation of an excavator or scholar, as in the case of the Piltdown Man in 1912.

Pernier (1874-1937) was trained as an archaeologist in Italy and among his readings he would have been quite familiar with the discovery of the Magliano Disk, found in Magliano, Italy in 1884, and published by L. A. Milani in 1893. This near-round lead disk (Fig. 6) contained an Etruscan inscription spiraling inward on both sides. Since the Etruscan language had not yet been deciphered, its contents remained a mystery. Perhaps Pernier could create a similar disk - but for the

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Fig 3 (far left). Minoan head seal with hieroglyphic saw sign. Cf. disk sign no. 16, the saw.
Fig 4 (left). Linear A tablet from the palace of Phaistos, c. 1750 BC.
Fig 5 (above right). Linear B bar 066 from the hieroglyphic archive at Knossos, c. 1750 BC.

Fig 6 (below left). The Etruscan lead Magliano Disk, c. 475-450 BC, found in Magliano, Italy, in 1884. The inscription spirals inward on both sides, but the other side does not have the spiral line. Note the three vertical dots near the bottom used once for punctuation compared to the five used on the Phaistos Disk.

Fig 7 (right). Minoan clay label in the form of a flat bivalve shell, with 'hieroglyphic' script, from the palace of Knossos.

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The Phaistos Disk

Minoans. Lead was rarely used in Crete except for smaller objects. It would have seemed more logical to make it out of clay, since most of the larger inscribed objects found on Crete were made of clay, such as the many tablets from Knossos that were later published in detail by Evans in *Scripta Minus* in 1909. Perhaps another source of inspiration for the design of the disk were the two offering tables found at Phaistos with relief spiral decorations mentioned by Hahliker in a 1900 letter to Comparetti. He may also have taken notice of the stamped designs on large Cretan *pithoi* (large storage pots) of the period. In another place, another source of inspiration may have been the semi-rounded clay labels with 'hieroglyphic' script from the palace of Knossos (Fig. 7).

The play was to create a completely new script that would confound Evans and the other scholars since it would be virtually untranslatable. He would cleverly construct new, more elaborate symbols that would not just, in part, mimic the yet-undeciphered three other scripts, but would also include all of them. He would also include elements that would reflect influence from foreign sources, such as the Luwian hieroglyphs from Anatolia, an early form of Luwian used by the Hittites between c. 1400 and c. 1200 BC (Figs 8, 34). For example, the writer had found four definite parallels (Fig 8) - compare no. 128C5 to disk sign no. 12, no. 12932 to disk sign no. 15, no. 1287A to disk sign no. 26, and 128CD to disk sign no. 38. Epigraphers would certainly suggest several more links since there are over 500 signs in the Luwian hieroglyphic text. A monumental Luwian inscription was first described in 1850, another in 1870, and a third in 1884, so it certainly would have been familiar to a scholar versed in Bronze Age linguistics in the early 1900s. This mixture on the disk of Minoan and Luwian elements would also puzzle scholars since it was not necessarily created at Phaistos but could have come from another undiscovered Cretan site with an Anatolian influence. It could also have originated from another Aegean site or even Anatolia itself. Thus, further confusion, a link to Egyptian hieroglyphs is found in such signs as nos.18 and 45, and especially to Egyptian wall paintings of the New Kingdom, as in signs nos. 1, 2, 3, 4, and 6.

To further confuse the linguists Pernier included several signs that resemble those of Linear A and Linear B - according to the writer, a total of about ten that show a relatively close or exact link. Six for Linear A (Fig 9): Sign no. 12, an elaboration of AB7B; no. 13, similar to A364; no. 16, similar to A8B7; no. 17, somewhat similar to A322; no. 24, an elaboration of A54; and no. 45, similar to AB76; and four for Linear B (Fig 10): Sign no. 12, an elaboration of Linear B 78; no. 14, a version of 87; no. 36, an elaboration of 30; and no. 45, an elaboration of 76.

Some epigraphers link even more of the Phaistos Disk signs to Linear A and Linear B. For instance, Torsten Timm demonstrates 19 links just for Linear A. The forget then quite often rotated the direction of a sign some 90 degrees or more, especially those of the cat head, sign no. 29. This, however, was a mistake, for it would not be the practice of a scribe carefully executing such a sophisticated script.

**The Uniqueness of the Phaistos Disk**

In making the clay disk, he made the error of creating a terracotta 'pancake' with a clearly cut edge. Ancient clay tablets do not have such sharp edges, because they would easily have damage from usage. He also fired the fine hand-formed clay disk uniformly. It is therefore unique in that Minoan clay tablets were not fired purposefully, only accidentally. They were only baked as a result of the fires accompanying the destruction of the palaces. Pernier may not have realised this at the time.

It is unique on several other more important counts. Second, there is no other ancient 'moveable type', in fact none until Gutenberg (AD 1454). Third, there is no other large, thin clay disk in the Bronze Age. Last, but certainly not least, there is no other hieroglyphic script of this type. The only advanced Aegean or Mediterranean hieroglyphic scripts are those of Egypt and Luwian and these are not related, except for the few signs that Pernier borrowed or adapted. These counts of uniqueness, each in a completely different category, point to the disk as a forgery.

**Find Spot of the Disk**

The palace grounds and town of Phaistos are located on one of the three 70-metre-high hills rising from the Mesara Plain on the west of the Island, 5km from the coast. It was named after a grandson of Herakles. Legend has it that an oracle ordered him to go to Crete. Phaistos was the legendary home of Rhadamantus, its ruler, and one of the three sons of Europa and Zeus. With his brother Sarpedon, ruler of Malia, he was forced to depart from Crete following an argument with Minos, the third brother and the ruler of Knossos. The first palatial building at Phaistos was erected c. 1900 BC, at about the same time as the palaces at Knossos and Malia. This Early Palatial Period ended c. 1700 BC as the result of a major earthquake and the consequential burning of the palaces. This destruction was previously thought by some scholars to be a result of foreign invasions, perhaps by Greeks or by Luwians from Anatolia. The palaces were rebuilt, but another disastrous earthquake, or military invasion by the Mycenaeans, took place c. 1450 BC. This time only Knossos and one other palatial site, Archanes, were rebuilt.

According to Pernier, the disk was found on the ground in Room 8 of the palace, close to the north-east corner, about 50cm above the bedrock, in dark earth that was mixed with ash, charcoal, and some pottery sherds. The earth, however, was not compacted and contained objects from other periods including part of a Hellenistic vase. Nearby was a Linear A tablet, PHI, with which he fixed the date of the disk at Middle Minoan III, c. 1700-1600 BC. There are several other proposed datings. The earliest is 2100 BC, proposed by Victor J. Kean, the latest, c. 1100 BC, by Kristian Jeppesen. Most scholars agree with Pernier that it was made c. 1700-1600 BC. It should be noted also that the room contained several Middle Minoan IIIB vases that date c. 1650-1600 BC.

**Creation of the Disk**

The disk is a hand-formed, irregular disk of fine-grained clay. It has been noted that the clay, even though as fine as that used for the local Kamares ware pottery, did not appear to be of a local origin, perhaps not even from Crete. The diameter varies from 15.8 to 16.5cm and the thickness from 1.6 to 2.1cm. Side A is thickest at the edges, side B is thickest at the centre. It was perfectly fired, unlike the tablets and seals that were baked by fires created by the destruction of the burning palace.

Opinions differ as to the way that the two sides were printed. Ernest Grumach (1969) thought that each side was imprinted separately, then the two sides joined, '...the seam can still be clearly seen along the edge of the Disk'. Reinier Van Meerten (1977) suggested...
that the basic disk, about 1.2cm thick, was fired first, then layers 0.3-0.4cm thick were applied to each side; next it was inscribed, the edges smoothed, and finally it was fired. Louis Godart (1990) believed that it was created in one piece, first imprinted on side A, then side B, the latter being impressed less deeply.

The Stamping of the Disk

Different stamps were used for several of the same signs. It has been suggested by various authors that the stamps were made of such diverse materials as gold, silver, bronze, lead, ivory, wood, and even stone. Godart favoured the use of gold for its durability and 'clarity of the contours'. Pernier had suggested hard wood or ivory, while Evans thought that they were metal cast in matrices of engraved steatite.

Stamps were often placed on the disk in different directions - sideways, upside down, and so on. This is not a normal procedure in which such sophisticated symbols would be used in antiquity. It is apparent that the order of the signs was not carefully planned and that the sequence was being invented as they were being stamped on the disk. This indicates that it was certainly not an ancient document. The spirals do not end in the centre; the symbols near the centre are crowded; there are overstrikes of the symbols near the centre; and the final two symbols overlie one another.

Leon Pomerance (1976) proposed that the inscriptions were not printed with individual stamps, but that each side was prepared from a single limestone matrix on which all of the signs were engraved. He based this theory on the fact that there were 'significant differences in the outline and shapes of identical symbols.' Gromach had earlier noted these differences.

If the disk is ancient why have none of the stamps used to create it ever been found either at Phaistos or at any other site? The writer has previously pointed out that a series of stone stamps with symbols (Figs 11-12) had been made between the 1890s and the early 1900s by the perpetrator of the notorious 'Michigan Forgeries' (see 'The Michigan Relics: An Archaeological Hoax', Minerva, July/August 2004, pp.
They were apparently used to press into the soft clay tablets and other clay 'relics' which they produced. They were said to be the first evidence of the migration of an ancient Near Eastern people to modern Michigan. Were these inspired by the Phaistos Disk - or were they possibly one of the principal sources for Fernier for the creation of the disk? Unfortunately we do not know when the Michigan forger, James Scottford, created his stamps, before or after the 'discovery' of the disk. Some were found in a tin dating to 1910.

**The Signs of the Disk**

Of the 45 different signs (Fig 15), there are 123 signs stamped on side A separated by vertical lines into 31 groups and 119 signs on side B separated into 30 groups. The groups have been interpreted as words, sentences, and even complete verses. The signs basically face to the right as if they were meant to be read as pictographs of recognisable everyday objects, as they do - with the exception of signs such as the vertical ship and fish. The frequency of the signs varies considerably according to the whim of the creator. Thomas Balstier (1998) points out that the shield, no. 12, appears 15 times on side A, but only twice on side B, whereas the breast or helmet, no. 7, appears just twice on side A, but 16 times on side B.

Many of the signs on the disk are unusually naturalistic, depicting a live-line not found to such a great extent in pictographic scripts of the time, such as Egyptian hieroglyphics. Clearly outlined representations, such as the striding man (no. 1), a bound prisoner (no. 4), and a flying bird (no. 31), are found only occasionally in other scripts such as Egyptian and Luwian. Scholars have argued for 100 years as to which writing system has been employed for this unique relic - do the signs represent words, syllables, or just letters?

It has been generally accepted that the signs just represent nouns and that verbs are lacking, the script being a syllabary, the signs acting as syllables and serving as an alphabet. Linear B is a syllabary. Godart points out that there are too few signs for a pictography and too many for an alphabet on the disk. It has been suggested by Günter Neumann (1968) that the script is a syllabary with some signs acting as pictographs. Thomas S. Barthel (1988), J. T. Hooker, and Michael Trauth (1990) also agree that it is a similar mixture.

In a pictographic script the sign represents the object that it depicts,
the image, not the word as such. There are too few signs on the disk and too many repetitions for this to be a functional pictographic script. Such a system would require many hundreds or even thousands of signs for this type of script and it would be impractical to make a stamp for each sign. Some scholars, however, such as Lienhard Delekat (1979) and Victor J. Keen (1996) support this theory.

Ernst Schertel (1948) believed that the script is a mixture of alphabet and syllabary, while Dirk Ohlenroth (1996) argued that it was a sophisticated early Greek phonetic alphabetic system with more than double the number of letters than the regular Greek alphabet of just 24 letters.

The Direction of the Signs
Although there had been much disagreement about the direction in which the signs should be read – from the centre out or from the outside in, it has been accepted by most scholars that it reads from the outside in, from right to left, as with the Egyptian and Anatolian hieroglyphs - towards the direction that the heads of the people and animals face. In Linear A and Linear B the reading direction is from left to right, but some scholars such as Godart argue that it has no relationship to these scripts.

The Strokes, Dotted Bar, and Corrections
There is considerable argument regarding the meaning of the 16 or 17 slanted strokes that appear below the sign furthest to the left in some groups (Fig 16). Furthermore, on each side of the disk there is a single 'dotted bar' composed of five dots (some scholars contend only four) on side A (also Fig 16) and five dots on side B. The strokes and dotted bars were incised by hand, as were the main spiral lines and the vertical dividers.

The dotted bars led Alice E. Kober (1948) to surmise that there were other disks and that these were the fourth and fifth sides of a long document. Rudolf Hoschek considered them to indicate pages or chapters in a group of several disks. It is the writer's contention that the strip of parchment were added merely to lead scholars astray - another oddity to puzzle them - and a common trick amongst forgers. Indeed, Dirk Ohlenroth (1996), because of the strokes, regards the disk as 'the oldest example of the use of natural punctuation'. The writer notes the similarity of the five dots on Linear B bar 057 (Fig 44) to the five dots on the disk. The dot in Cretan script represents the number 10; five dots represents 50 (Fig 15). Was this numbering system the source for the forger's dotted bars? The writer notes that the vertical bar represents the Cretan script number 100 - is this the inspiration for the vertical lines of the disk? (See Fig 7 for a vertical bar and two dots, Fig 44 for a bar and five dots.)

In 16 instances signs were erased and replaced by different signs. One would not expect so many corrections in such an elaborate production if it was an ancient document. Ernst Grumach (1962) suggested that the scribe was not correcting mistakes but actually improving the content or form.

COMPARISONS
The Arkalochori Axe
For years local peasants had been digging in a shallow cave in Arkalochori in central-eastern Crete and unearthing a large variety of bronze weapons and other metal objects. Sadly, many of these have been lost because they were often melted down and made into farm tools. A Greek archaeologist, Joseph Chatzidakis, first excavated the cave in 1912 and found many weapons - swords and daggers - and a large group of votive double axes. Soon thereafter a gold double axe was found by some children. The cave was then rapidly plundered by the locals.

In 1934 Spyridon Marinatos, the Director of the Herakleion Museum, confiscated many of the objects and renewed the excavations. One of 25 gold axes and one of six or seven silver axes found had short inscriptions in Linear A. A bronze axe (Fig 17), however, was inscribed with 15 hieroglyphic signs in three columns (Fig 18). Of the 15 signs, ten of them (with two repeated) seem to be unique. In her January/March 1935 American Journal of Archaeology report Elizabeth Pierce Blechen mentions the discovery in 1934 of the double axes in silver and gold, and bronze axes, knives, and swords 'numbered by the hundreds', but, oddly, no mention of any inscribed items. Godart stresses that 'there are no definite comparisons between the signs of the Disc and the syllabary used in the three known Cretan scripts (Hieroglyphics, Linear A and Linear B)...'

The Gold Ring and Silver Pin from Mavro Spillo
A gold ring found in 1926 at Mavro Spillo, Crete, by Sir Arthur Evans has a spiral arrangement of the text which consists of 19 signs in Linear A (Fig 19). The ring, with an inner diameter of only 13mm, was certainly too small to wear and, in fact, its authenticity has been questioned. A silver pin from the same site also has an inscription in Linear A.

The Malia Altar Stone
A stone slab excavated in 1937 at Malia, Crete, by Fernand Chapouthier, has 16 inscribed hieroglyphs, three repeated twice, and is the only example of a Cretan hieroglyphic inscription on stone (Fig 20). Alice Kober (1938) stated that '...the resemblance between the signs of this inscription and that of the Phaistos Disk is very slight.'

The Vladikavkaz Disk
A clay fragment of a disk with 20 signs (Fig 21) was found in the basement of a house built in 1880 in Vladikavkaz, in the Russian Republic of North Ossetia-Alania, in 1991. It copies some of the signs and groups on the Phaistos Disk but they are incised rather than stamped. It is said that it was recognised by the local museum as a forgery and returned to the owner but has now apparently disappeared. It could possibly be a forger's prototype for the disk.
The Phaistos Disk

or merely an attempt at copying the original forgery.

CONCLUSION

Several of the errors made by the forger of the disk fit into the categories tabulated by the writer in his 'Aesthetics of the Forger: Stylistic Criteria in Ancient Art Forgery' (Minerva, May/June 1992, 10-15). They include:

1. A disparity in the style of execution of the elements.
2. A disparity in the degree of abstraction of the elements.
3. A unique element in the composition.
4. A 'unique style': the appearance of a fully developed style or type hitherto unknown.
5. Reported favourite ancient motifs and devices of the forger - in periods or regions where they do not ordinarily occur, or invented types.
6. Reversal of image.
7. A synthesis of geographically disparate styles.
9. Correction by elimination.

One can allow for a small number of these elements to occur in a genuine antiquity, but the preponderance of such elements for the disk leads to the conclusion that it is certainly a forgery. However, only a thermoluminescence test to determine whether the disk was created in the past century or two or over three millennia ago will finally settle this intriguing problem to everyone's satisfaction. The writer has attempted to have this test carried out several times in the past but to no avail. It is not even possible to physically examine the disk outside of the case at the museum. In a reply to a most recent request to the museum to examine the disk, the Director, Dr Nota Dimopoulou-Bethemiotaki, wrote:

'Dear Dr Eisenberg, in reply to your e-mail of July 25, 2007, we would like to inform you that unfortunately we are not able to satisfy your request to examine the Phaistos disc and the inscribed Arkalochori axe. Specifically, the inscribed Arkalochori axe is encased and stored, whereas the Phaistos disc because of its uniqueness is considered as non movable...'

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Fig 22. Sign on Linear A tablet PH18 from Phaistos. Cf. to disk sign no. 1, the 'pedestrian'.

Fig 23. Advancing boxer on Hagia Triada 'Boxer Rhyton'. Cf. to disk sign no. 1. His hands are bound with fist wrappings similar to disk sign no. 8.

Fig 24 (below left). Sea Peoples in Egyptian 19th Dynasty wall relief. Cf. headaddresses to headdress of disk sign no. 2, the plumed head.

Fig 25. The Luwian sign za that resembles the phymes on disk sign no. 2, the plumed head.

Fig 26. Cretan captive with tattoo from Egyptian 19th Dynasty wall painting. Cf. tattoo on face of disk sign no. 3, the tattooed head.

Fig 27. Ivory figurine of a child with shaven head from Palaikastro. Cf. disk sign no. 5, the child.

Fig 28. Polychrome clay female figurine from the first palace at Phaistos, c. 1750 BC. Cf. disk sign no. 6, the woman.

Figs 29 (right). Sealstone from the controversial Treasure of Thisbe, Boeotia. Cf. hair and garment of figure at left with disk sign no. 6, the woman.
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ANALYSIS OF THE PHAISTOS DISK SIGNS

The 45 different signs on the disk are numbered here according to the system set up by Sir Arthur Evans. The number in parentheses following Evans’ name for the sign (used here with some modification) is the number of times that the symbol appears on the disk. The first notations in most of the sign entries are the possible sources of the sign as suggested by various writers. For full references for the names of scholars mentioned, see Appendix: Attempts at Deciphering.

1. PEDESTRIAN (11) Crete, Egypt. Cf. stick figure on Linear A tablet PH18 from Phaistos (Fig 21); Mycenaeans in 19th dynasty wall paintings in Egyptian tombs. JME (the writer): Possible source for Pernier: The advancing boxers on the Haghia Triada steatite rhyton, the ‘boxer vase’ (Fig 22), coincidentally excavated (1900-1908) by Halbherr with Pernier. Also see the Luwian signs for ‘walking man’ or ‘walking legs’.

Meanwhile the disk, which has long been considered to be ‘One of the most famous mysteries of archaeology’ (Wikipedia) remains an enigma. Our readers’ comments, as usual, are welcomed.
2. PLUMED HEAD (19) Sea Peoples (Peleusset, Dentzion, Tzekiker), Egypt; Crete. Cf. Sea Peoples in 19th Dynasty wall reliefs on Egyptian temples (Fig 23). It is vaguely similar to one of the signs on the Arkalokhori axe (Fig 18), though it is facing; and the hairstyles on terracotta male figures from Traostalos near Ksato Zakros, but far more sophisticated in its depiction. (Evans, Godard, Pernier: feathered helmet.) JME: Cf. Luwian sign for mu (Fig 25). The closest comparison, however, is the headdressed of the American Indian which required no visible skull cap.

3. TATTOOED HEAD (2) Crete, Egypt. Cf. Minoan man with figure-of-eight tattoo in Egyptian 18th Dynasty wall painting (Fig 26). (Dettmer: not a tattoo, but a Cretan double earring.) JME: It was certainly derived from the Egyptian wall painting.

4. CAPTIVE (1) Asia Minor, Egypt. Cf. Asian prisoners on 19th dynasty temple walls. (Aarhus: walking farmer distributing seed; Dettmer: female prisoner.) JME: It was most probably derived from the Egyptian depictions of prisoners with their hands tied behind their backs, such as those depicted on Sei I's Temple of Amon at Karnak.

5. CHILD (1) Crete. Cf. ivory figurine of a child with shaven head from Zakros for the use of a 'bald' child in Cretan art (Fig 27). JME: The five signs for heads and persons all have bald heads making comparisons with the hairdos of people in other scripts or signs perhaps purposefully difficult. The source for the bald heads was perhaps one or more of the ivory figurines of children with shaven heads from Zakros and Hagha Triada.

6. WOMAN (4) Crete, Sea Peoples, Egypt. Cf. hairstyle to that of the Sea Peoples in 19th dynasty wall reliefs on Egyptian temples. (Evans: sharp contrast to Minoan-Mycenaean female type; Pernier: relates it to Cretan garb; Doro Levi: found ‘parallel’ to female idols found at Phaistos.) JME: The apparent source for this sign was a small figurine with pendulous breasts, hair flowing behind, and a flounced skirt from room XCVI-XCVIII of the first palace at Phaistos (Fig 28) or another perhaps found previously by Pernier. Another source might be the seashell from the controversial Treasure of Thisbe from Boeotia. This depicts a woman with hair flowing behind and flounced skirts (Fig 29).

7. HAIR FOR BREAST (18) Europe. Cf. Bronze Age helmets. (Goddard: helmet; Evans, Dettmer: breast; Pernier: cap.) JME: Possible source for Pernier: the Phoenician or Bronze Age helmet (Fig 30). If it was a breast it would be more logical to show two of them. There is no ancient parallel for a single breast as a sign.

8. GAUNTLET (5) Crete. Cf. boxers with hands bandaged. (Goddard: fighting glove; Dettmer: workman’s glove.) JME: Possible source for Pernier: the fist wrappings of the boxers on the Hagha Triada straitte rhyton – the ‘Boxer Vase’ (Fig 23) - excavated by Halbherr with Pernier; or the classical cestus (boxing glove) (Fig 31).

9. TIARA (2) Hittite. Cf. seals and rock carvings for similar headgear. JME: The most likely source for Pernier would be the nearly identical tiara which appears on rock carvings such as the one in a Hittite shrine at Yazilikaya, c. 1250-1220 BC (Fig 33).

10. ARROW (4) Crete. Cf. Linear A ideogram. But no arrowhead? (Olhendorf: ear of grain.) JME: The Minoan sign of an arrowhead appears with or without a shaft, but no barbs, as well as one with no arrow point but with barbs – a complete reversal. However, on a Linear B tablet from Knossos the ideogram for an arrow is quite close (Fig 32), though simplified since it is incised on clay. A comparison made to Linear A sign AB79 is rather far-fetched.

11. BOW (1) Crete. Cf. Minoan seals. JME: Cf. the Luwian sign of a winged sun-disk (Fig 34).

12. SHIELD OR PLATE (17) Crete. Cf. Mycenaean shield examples. (Pernier: it resembles a keros offering table found at the palace of Mallia (Fig 35), but it has 34 circular depressions around the rim, not six; Duhoux: a design stamped on a pottery vase from Knossos (Fig 36); Dettmer: a disk with seven points for the solar year.) JME: Pernier’s source certainly would have been the Luwian sign for bread, 128C5, a disc with up to seven dots, the seven dots being placed in the same positions (Fig 8) or, less likely, a similar Egyptian hieroglyph with five or four dots representing corn on the threshing floor. Also, Linear A sign AB78 is a circle with 3 dots.

13. CLUB (6) Greece. (Evans: club of Herakles; Dettmer: a plant; Ohlendorf: ‘cypress’.) The club of Herakles, to which it has been compared, first appears considerably later.

14. MANACLES (2) (Aarhus: foot-
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FIG 45 (left). Predynastic Egyptian vase with Nilotic ship: ensign or standard on cabin, Naqada II, c. 3450-3300 BC. Cf. disk sign no. 25, ship.

FIG 46 (right). Gold ring from Mochlos with Minoan ship, c. 1450 BC.


FIG 48 (below left). Minoan hieroglyphic symbols for ships. Cf. disk sign no. 25.

FIG 49 (below right). Red cornelian prism with cat with facing head, found in 1936; cover illustration for Evans’ Scripta Minoa I (1908). Cf. disk sign no. 29, a head in profile and quite different.

FIG 50 (below right). Egyptian wall painting from the 18th Dynasty tomb of Useramon at Thebes, c. 1460 BC showing Cretans carrying rhytons (libation vessels). Cf. disk sign no. 30.

angles; Godart: carpenter’s plane.)

20. DOLIUM (2 Crete). Cf. the obsidian dolium (sea shell) from Hagia Triada (FIG 40) (Aartun: dry-measure container; Dettmer: vessel; Evans: vase; Godart: ton shell.) JME: The shading or use of parallel lines is unique for this sign on the disk.

21. COMB OR FLOOR PLAN (2) Crete: palace floor plan (Aartun: hoe or rake; Dettmer: weaving comb; Godart: comb.) JME: The source is certainly the sign on Proto-Palatial clay seal impressions on document HM 992 (FIG 41) at Phaistos (excavated by Perrier). The suggestion by Woudhuizen that it resembles Swedish rock carvings of a team of plowing oxen is a bit extreme.

22. SLING or DOUBLE FLUTE (5) It has been compared to Linear A sign A318, but there is little resemblance. (Aartun: whisk; Dettmer: curve measure; Evans: double flute; Godart: slingshot or catapult; Ohlenroth: forked stick.)

23. COLUMN or HAMMER (11) Cf. Linear A sign AB06, though it consists only of lines at right angle. (Aartun: club; Evans: hammer; Dettmer: a disk surrounded by a column with capital.)

24. BEEHIVE or STRUCTURE (6) Lycia: cf. rock-cut tomb (FIG 42), Egypt: cf. Pun (Somalia) hut on 18th dynasty Hatshepsut temple wall relief; Crete: cf. very simplified Linear A sign AB54 (FIG 9); Linear B sign 179 (FIG 43). Knossos, (Aartun: house; Evans: pagoda-like building, animal coop, or bird cage; Godart: beehive; Erika Spann-Relisch: covered palanquin.) JME: Cf. Cretan hieroglyph as on a four-sided clay bar (FIG 44). The forger, however, most probably used the Lycian tomb as the main source.

25. SHIP (7) Egypt: small Predynastic pots, c. 3200 BC, with symbols on the cabins of Nilotic ships (FIG 44); Cyclades (see below); Crete: gold ring from Mochlos (FIG 46). (Aartun: saw-bow; Dettmer: plow) JME: Cf. ships on Cycladic ‘frying pan’ vessels, c. 2300 BC (FIG 47) An unusual case of a 90 degree shift in the position of the image to save space; most probably the only instance of a ship represented on its side as a symbol, though it is also depicted horizontally once on side B (therefore why should the vertical depiction be considered a space-saver?). It is lacking a mast; ships as Minoan hieroglyphic signs almost always have masts (FIG 48).

26. HORN (6) Ox horn’ (Aartun: tail). JME: Cf. Lewian sign no. 1287A (FIG 8) which is a more than probable source.

27. HIDE (15) Crete. Cf. Linear B ideogram *258 from Knossos and *154 from Pylos. (Evans, Godart: cow skin; Dettmer: goatskin.) JME: Why is the hide inverted twice in the same group on side A?

28. BULL’S LEG or COW’S LEG (2) Crete. Cf. steatite seals with bulls’ legs from Malia. JME: An unusual case of reversal of image, in this case turning an animal part upside down; there are several instances of a Minoan hieroglyphic sign for a human leg (FIG 49), but none for an animal leg. Cf. Egyptian sign for the leg of an ox.

29. CAT HEAD (11) Crete. Cf. seal impressions on vases from Malia; facing heads appear in Linear A sign AB80, though extremely simplified. The direction, however, is changed from right profile to a facing head. Linear A sign LI49 is found only on clay tablets. (Evans, Godart, Ohlenroth: cat; Dettmer: wild dog; Perrier: bulldog.) JME: Cf. cat with facing head on a red cornelian prism found in 1898 (FIG 49). Why is the cat head imprinted in different directions on the disk, some 90 degrees or more from the horizontal? It would not be the practice of a scribe executing such a sophisticated script; this is certainly
not a schoolboy's practice tablet. See the possible explanation below (for sign no. 30).

30. RAM HEAD (1) Some scholars relate this to the Linear A symbol of a ram — sign AB13, but this is a bit far-fetched, as the Linear A sign is highly abstract. JME: An Egyptian wall painting from the tomb of Useramon, c. 1460 BC, depicts Cretans bringing tribute to Egypt including animal-head rhytons (Fig 50). The writer believes that this may be the inspiration for the ram head sign (rather than using the more common bull's head rhyton). The Minoan hieroglyphic signs for the ram do not show the horns projecting beyond the profile of the head, although there is a goat head with outwardly curving horns (Fig 37). The single ram head and two cat heads on side B face upward, the same position as the animal head rhytons in the Egyptian wall painting. It should be pointed out that the writer is using the drawing from Robinson's book, and he notes that the ram head — on side B — had been mistakenly replaced in the drawing by the artist for a helmet, disk sign no. 7. We have corrected this in our copy of the drawing.

31. EAGLE AND SERPENT (5) (Aar- tun: Ofroitho: falcon; Evans, Dettmer, Godart: eagle.) JME: Imprinted in different positions: upward, to the left, and to the right. Signs for the eagle in Crete, AB81 (Fig 51), and Egypt are quite different, the former again being highly abstract.

32. DOVE (3) (Aar-tun: goose; Dettmer: duck; Evans, Godart: dove.) JME: It is unlike the preening and pecking birds of Cretan hieroglyphic script (Fig 52), however the source is certainly one of the Knossos frescoes with partridges (Fig 55), a bird no one has apparently considered previously.

33. TUNNY (6) (Dettmer: the scribe meant a 'large fish', but it is a dolphin; Evans, Pernier: tuna.) JME: cf. the fish on a Minoan bead seal (Fig 56). It could be an elaboration of a Minoan symbol or the fish on the Cycladic ‘frying pan’ vessels, as the one from Naos with four fish, c. 2500 BC, published by A. K. Stephanos in 1905 (Fig 57).

34. BEE (3) (Aar-tun: wineskkin; Dettmer: bird's-eye view of cow.) JME: Not a Minoan or Egyptian depiction of a bee, the symbol for which is done in profile. Pernier's inspiration for using this insect was probably a Linear A sign with the vertical line removed (Fig 53).

35. PLANE TREE (11) Crete. Cf. Linear A sign AB04, though only with one branch. (Aar-tun: fruit; Dettmer: oak; Evans: plant or tree; Godart: bush or branch with broad leaves; Pernier: branch of plane tree.)
Amazon Research Center (website) – A claim that some signs are similar to rock engravings in North Africa.

Ballistier, Thomas (2000) – The Phaistos Disc – an account of its unsolved mystery (originally published as Der Diskos von Phaistos: Zur Geschichte eines Rüttels und den Versuchen seiner Aufklärung (1998). Discussion of decipherments of Aturn, Ohlenroth, Dettmter, and others. '...today, however, it seems rather absurd to assume it is a fake.'


Barger, Jorn (2001, website) – Probably the funeral psalm of King Arion, c. 1800 BC, from islands near Troy.

Barthel, Thomas S. (1988) – 'Forschungsperspektiven für den Diskos von Phaistos' in Münchener Beiträge zur Völkerkunde, vol. 1, 9-24. The differences in content from side A to side B represent 'a thematic change from day to night and male to female' (Ballistier).


Best, Jan, and Woudhuizen, Fred C. (1989) – Lost Languages from the Mediterranean. Best: an abstract of correspondence between King Nestor of Achaea (outgoing letter on side A of the disk) and the King of Phaistos (Talatunwogat or Kunawa?) (incoming letter on Side B). (See Fred C. Woudhuizen.) Best dates it to the first half of the 14th century BC.


Bowden, Edgar (1992) – Cybele the axe-goddess: Alliterative verse, linear B relationships and cult ritual of the phaistos disc. Greek alliterative verse meteri describes an Anatolian religious cult of 'Cybele Axe Goddess and Poseidon Hippolos'.

Brdic, Steve (1998, website) – An astronomical interpretation using the solstices. It refers to the cycle of the sun over the year.


Butler, Alan (1999) – The Bronze Age Computer Disc. A system of measuring time, space, and distance. The primary meaning of the text was mathematical rather than linguistic... an astronomically explicit calendar... goes beyond the basic zodiac to include planetary movements... including the possible reality of Atlantis (or the Atlantic) and the possession by the Minoans of extensive knowledge of the outer solar system. This is a good example of 'pseudo-archaeology'.


Chadwick, John (1958) – The Decipherment of Linear B.

Chadwick, John (1987) – Linear B and Related Scripts. A simple syllabic system. 'None of the more complicated and numerous signs can be parallelled. Its Minoan origin must thus remain in doubt until more evidence is available.'...the world's first typewritten document'. It has been a millstone round my neck for decades.

Coppen, Philip (2000) – 'The Phaistos Disk' in Frontier, January-February. It could be used for both a chance game and a 'rule game', like backgammon.

Corsini, Marco Guido (2002-2005, website) – 'The Apothoeis of Seuenra Tao II/Rhadamantos, c. 1544 B.C. (on the Phaistos Disc)'. Greco-Cretan-Egyptian, c. 1600-1540 BC. It is the Disk of the Ra/Sun Rhadamanthys, 'Rhadamanthys was a pharaoh of Greek origins (and, following the Greek tradition, king of Phaistos). The Apothoeis of Rhadamanthys was then deposited in the archives of the final phase of the first palace of Phaistos. Rhadamanthys was born in a Greek speaking city, probably Phaistos (following the tradition that he was born in Gortyn, which descended in origin from Phaistos, the capital of the Messara), where since 1700 BC, the Ionians adopted the scripture.' Blissful lady of the labyrinth, blissful Teosia, lady of the coffins and protector of the pyramid. The daughter of Creon Megara consecrate there to You, the daughter of Creon in the cell of the labyrinth, the daughter of Creon Megara consecrate there to You the dead.'

Crombette, Fernand (1880-1970) – Clartés sur la Creté (vols 1-3). Monosyllabic, pictographic signs in a Coptic text. Of Basque origin. Relates the adventures of Icarus; used as a board game. Crombette believed that the first king of Crete was the son of the first king of the 1st Dynasty of Egypt.

Crystal Links (website) – The disk speaks about the spiraling nature of reality and creation which links to Sacred Geometry - the Golden Mean Spiral - Phi Ratio - the manner in which consciousness moves between

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reality. ‘In conclusion, the Phaistos Disk is another one of the ‘Games of Thoth’ created to bring awareness about the nature of reality.’


Davaras, Costis (1967) - ‘Zur Herkunft des Diskos von Phaistos’ in Kadmos, 6, 101-105. Because of the finding of the clay ‘plumbed’ heads (cf. sign no. 2) at Traostalos near Kato Zakros, the disk’s non-Cretan origin is ‘losing more and more credibility.’

Davis, Simon (1967) - The Decipherment of the Minoan Linear A and Pictographic Scripts. An acrophonic syllabary in a Minoan or Hittite language. A resemblance to Anatolian hieroglyphs. Regarding the manufacture of seals. ‘…sealings, spirals, stamps seals inlaid stamps sealings great (one) stamps.’

Duhoux, Yves (2000) - ‘How not to decipher the Phaistos Disc’, American Journal of Archaeology, 104, 3, 597-600. Cretan provenance, c. 1850-1600 BC. Could be related to Linear A. A review of Faouconnou’s Le déchiffrement du disque de Phaistos. Preuves et Consequences. ‘The Minoan character of the disk, regularly debated in the past, is assured thanks to an impressive series of points in common with indis-putable Minoan artifacts.’ He claims that the signs have ‘clear affinities with the Arkalokhori axe’.

Dunand, Maurice (1945) - Bybliothèque Cretan. The book of prehistory according to the Proto-Byblic script.

Eisenberg, Jerome M. (1999) - In a letter to The Economist, 16 January: ‘a joke perpetrated by a clever archaeologist from the Italian mission to Crete upon his fellow excavators… Taking a thermoluminescence test, which should date the firing of the clay at about 100 years ago, can solve the mystery of the disc.’


Evans, Arthur J. (1909) - Scripta Minoa I, the written documents of Minoan Crete… Non-Minoan, from Asia Minor (1921). The human figures and costume are non-Minoan and ‘no more than ten or more less resemble Cycladic hieroglyphic forms. Hieroglyphic sign no. 2, the plumed head, with the Philistine headress and sign no. 24, the building, with the Lycian rock-cut tombs. Possibly a hymn or religious chant to the earth goddess, the goddess of fertility, or the Anatolian Great Mother who was worshipped in both Asia Minor and Crete.

Fattah, Nurihan (n.d.) - The Language of Gods and Pharaohs. The disk is a text in Tatarish-Turkish about the feast of a nobleman. Fattah, a Kazan University professor, also claims that the written and spoken language in Atlantis was Turkish.

Fauconnou, Jean (1975), (1999, 2001) - Le déchiffrement du disque de Phaistos. Preuves et Consequences. He claims that it comes from the Syro-Cypriote dialect of the Cyclades. In Greek dialect, a syllabic acrophonic script comparable to Linear B. The invention of an early Aegean people, the Proto-Ionians’, borrowing the idea from 6th Dynasty Egypt. A funereal hymn to Arion, child of Argos, destroyer of lutes. In fact, this study commits enough serious errors of all sorts to warrant a secure place in the anthology of misguided decipherments. He mixes true syllabograms (representing sounds) with some purely alphabetical consonants, a combination unknown in deciphered Aegean scripts.


Fell, Howard Barracough (1973) - ‘Polyvalent tablets and Protopolyvalent. A newly deciphered branch of the three known Cretan scripts (Hieroglyphics, Linear A and Linear B).’

Fischer, Steven R. (1988) - Evidence for Hellenic Dialect in the Phaistos Disk. Greek dialect, syllabic script. A Minoan call to arms to repel Carian invaders from Anatolia. Ventris and Chadwick, Fischer gradually came to the idea that he might be dealing with early Greek or at least Indo-European. ‘The translation offered involves a published announcement, or the transcription of a speech, by the commander of a Minoan naval force, urging his troops on to battle (apparently near Naxos) against invaders from Anatolia.’ ‘Hear ye, Cretans and Greeks: my great, my quick! Hear ye, Danaitians, the great, the worthy! Hear ye, all blacks, and hear ye, Pudians and immigrants!’


Franklin, Kenneth (with Leon Pomeraux) - A calendar or an almanac (see Leon Pomeraux).


Godart, Louis (1990, 1995) - The Phaistos Disc - the enigma of an Aegean script. From an Aegean culture. Middle or Late Minoan, c. 1550-late 13th century BC. ‘Among the written testimonies from ancient Crete there is not a single text that permits us to define any relationship whatsoever with the Phaistos disk. Thus we can say with certainty that the script on the disk is totally alien to the scripts of Minoan-Mycenaean Crete.’ Godart points out that ‘there are no definite comparisons between the signs of the Disc and the syllabograms of the three known Cretan scripts (Hieroglyphics, Linear A and Linear B)...’
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Gordon, F. G. (1931) – Through Basque to Minoan: transliterations and translations of the Minoan tablets. A hymn to the ‘rain lord’, associated with Aquarius, in a language allied to Basque. ‘...dogfish smiter on the creeping flower, the lord, smiter of the horse-hide; the cog climbing the path, the dog emptying with the foot the water pitchers, climbing the circling path, parching the wineskin...’

Grumach, Ernst (1962) – ‘Die Korrekturen des Diskus von Phaistos’ in Kadmos, 1, 16-26. Cretan origin. He suggests a change in content at a point near the end of side A from a male to female theme.


Haarmann, Harald (1990) – Language in Its Cultural Embedding. Ideographic writing. A sacred text of a funerary rite, the symbols representing persons, gods, spirits, offerings, events, places, attributes, and religious activities.

Hagen, Ole 1988, 2001 – The Phaistos Disk – Atlas of the Minoan Calendar. A calendar with the names of months. He claims that the images describe ceremonies or duties that should be performed on the appropriate date.


Hansel, Stanislaw (1999, website) – It is probably written in a Semitic language that he calls Keftian after the Egyptian name for Crete – Keftiu.


Jeppesen, Kristian (1962) – Some remarks on the Archaeological Placing of the Phaistos Disc in KÜML, 180-190. A similarity to several Egyptian hieroglyphs. After 1400 BC, probably c. 1100 BC.


Kean, Victor J. (1985) – The Disk from Phaistos. Pictographs filled out with text, 2100-1900 BC. ‘...the printed record of the Phaistos Disk’ in KÜML, 180-190. A similarity to several Egyptian hieroglyphs. After 1400 BC, probably c. 1100 BC.


Kretschmer, Paul (1931) – Die Älteren Sprachschiften auf Kreta’ in Glotta. A Carian document with a list of soldiers. A possible link to the Illyrians and to the Etrusco-Venetian and late Greek scripts.

Kitsopoulos, Konstantinos D. (1981) – ‘Die antike Punktierung und der Diskos von Phaistos’ in Minos, 1, 7-25. According to Mark Newbrook, he decided that the text was in a Semitic language and dealt with gods, stars, prophecies and the white of eggs.

Kvashilava, Gia D. (2006) – The Phaistos Disc – Colchian Goldscript. Syllable-logograms in Old Colchian. The disk was brought from the Black Sea area through trade to Crete.

Louise, Olivier M. (website) – Greek, about a destruction of Thiera.

Macalister, R. A. S. (1914) – ‘The Philistines’ in Palestine Exploration Fund Quarterly, 141 (JME notes, 1968). It has a Libyan connection and similarity to several Egyptian hieroglyphs. A judicial court list, dated, with the magistrates’ and witnesses’ names.

Mackenzie, Duncan (c. 1908) – Cretan Palaces, Maccenzie, Field Director for Sir Arthur Evans and an expert on Cretan clay tablets and sealings, thought that the clay is of foreign origin.

Marinatos, Spyridon (c. 1935-39) – A sacred script. He considers the disk and the Azekalokhi axe (found by Marinatos) to be ‘cultural artifacts of the same kind’.

Martin, Adam (2000) – Der Diskos von Phaistos – Ein zweisprachiges Dokument geschrieben in einer frühgriechischen Alphabetschrift Erhaltlich. Greek-Minoan bilingual alphabetic text. Side A is an early Greek text for a funeral service meant to console a bereaved person. Side B is the Minoan version of the same text.

Massev, Kevin and Keith, A. J. (1997-2003, website) – Mysteries of History Solved. A magical text, perhaps a curse, in an Indo-European syllabic script. ‘this Proto-Byzantine script which is demonstrated by the Messay twins as being a closely related orthographic system to the Phaistos Disk’. ‘The underlying language of the Proto-Byzantine script was Semitic. It is a linear script which displays many identifiable objects, like weapons, human figures, and body parts.’ Later, an unknown Greek script for an inventory of goods ‘similar to most of the Linear B tablets’. What may have happened in the world of the Phaistos Disk is that farmers and merchants brought commodities to a palace, temple, or treasury and deposited them in this central location. For this deposit, they would be given a record, somewhat like a receipt. This is what Linear B tablets tended to be, listings of commodities and goods. The Phaistos Disk is the same thing.


Mellink, Machteld J. (1964) – ‘Lycian Wooden Ruts and Sign 24 on the Phaistos Disk’ in Kadmos, 3, 1-7. She links sign 24 with a motif of a wooden hut on a large Lycian burial vessel even though the vase is from the 3rd millennium BC.

Meyer, E. (1909) – ‘Der Diskus von Phaistos und die Philister auf Kreta’

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Myres, J. L. (1930) - Who were the Greeks? An Anatolian import.

Nahm, Werner (1975) - Vergleich von Zeichen des Diskos mit Linear A in Kadmos, 14, 2, 97-101. - Of Cretan origin, made at Phaistos. Comparison with some symbols to Linear A - the walking man, no. 1, to L148 and the cat's head, no. 29, to L149, two that found only on tablet PH8 from Phaistos.

Neumann, Günter (1968) - Zum Forschungsstand beim 'Diskos von Phaistos' in Kadmos, vol. 7, no. 1, 27-44. Of Cretan origin. It cannot be dated much earlier than the Arkalochori axe. Ballister quotes Neumann: '...whoever chooses this document as the object of his research must carefully assess the limits of his possibilities, if he does not wish to experience that no one but himself believes his theories to be correct.' He notes a clay ritual plate from Phaistos with figures of cattle and sparii stamped around above edge. He considers the disk, the Arkalochori axe, and the Malia altar stone scripts to be 'individual or local forms' of the same pictographic script.

Olenroth, Derk (1996) - Das Abaton des lykischen Zeus unter der Hain der Elaià. Of Cretan origin, made at Phaistos, c. 1850-1550 BC. Free verse in a Greek dialect, a phonetic, alphabetic script, the pictography almost doubling for the Greek alphabet signs. It is about two sanctuaries in the Peloponnese in mainland Greece and is a votive offering for the appeasement of the gods, probably the god following the eruption of Thera. On one side, an inscription text curvature those who enter the shrine of Zeus on Mount Lycaeon in the south-west of Arcadia; on the other side an invocation of the night goddess Elaia (the local epithet for Demeter), a curse resulting in the loss of one's shadow if an attempt is made to enter the shrine. Side A: Zeus is also the radiant one. If Zeus is the Lycaean, (he) from whose beloved grows a shoot of his same essence... Side B: 'Enter the grove of Elaia: Ignite smoothened wood all around: In a circle around the sacrificial tripod must seat the earth and whiny suddenly like a pair of horses.'

Olivier, John-Pierre (1975) - Le disque de Phaistos', edition photographique, Bulletin de Correspondence Hellenique, 99, 5-34. He questions the authorship of the Phaistos disk.

Ovendon, Michael, and Archie Roy (website of Mark Newbrook) - a suggestion that the zodiac must have been first recorded somewhere in the latitude of Crete at around the same time to which the disk is dated.'

Pendlebury, J. D. S. (1939) - The Archeology of Crete. The disk is an import from Anatolia.


Plagnol, Philippe (2007) - Ideogrammes. It shows a stronger relationship to Egyptian hieroglyphs than to the rectilinear and austere tablets of the syllabic writings rediscovered with it.


Polymeros, G. (website) - A Greek language. 'Palace's Priestess/shout loud so that I get healed/holy clothes I have brought up here to you. /Respectable, perfect (animals for sacrifices) I have brought up here to you for the Palace' (from www.UniLang.org).

Pomerance, Leon (1976) - The Phaistos Disk: An Interpretation of Astro-nomical Symbols. Of Cretan origin. An astronomical document in a pictorial form of symbolic communication. He suggests that the entire design has been cut into a soft limestone matrix for each side and then impressed on a pancake of soft clay. The two disks of clay were then trimmed around the edges, not quite accurately, placed back to back, and joined with slipped clay'. This would mean that it was not just a case of individual stamps being used à la Gutenberg, but that was indeed an amazingly early precursor of precast linotype.

Pravilov, Victor (2006? - website, in Russian) - A device for the manufacturing of metal wares. Semantic signs for a 'polyideographic language'. It is linked to the internal structure of the deep-sea cephalopod nautilus pompilus.

Prendergast, Jane (website) - 'Notes on the Phaistos Disc'. A Hittite origin because of: (1) the similarity between the number of differing symbols on the disk and the number of syllables in Hittite and Luwian; (2) analogies of the symbols themselves to Hittite hieroglyphs and artefacts and (3) correspondence of objects depicted by the symbols and themes from the History of Hattusha. It is possible that the disk may be a record of gifts made to a temple, possibly that of Artina. She notes 'the resemblances between the material of the disc and the text of the Wars of Hattusili.'


Richter-Ushanas, E. (website) - The Disk of Phaistos and the Sacred Marriage of Theseus and Ariadne. A pseudo-scholarly decipherment.

Rjabchikov, Sergei V. (1998) - Proto-Slavonic dialect, syllabic script. 'He makes the observation that the Phaistos Disk signs are the decorative version of the Linear A script. He reads the Disk - and Linear A - as early Slavic, more specifically as instructions for rituals; he also believes that Etruscan was close to early Slavic.'

Robinson, Andrew (2002) - Lost Languages. He quotes the writer (JME) in his letter to The Economist, 16 January, 1999: '...a joke perpetrated by a clever archaeologist from the Italian mission to Crete upon his fellow excavators... Taking a thermoluminescence test, which should date the firing of the clay at about 100 years ago, can solve the mystery of the disc.'

Roelvink, Hedwig (1999, website) - 'The Disk of Phaistos. The millenium problem of Crete solved?' An Anatolian script of pictograms, probably a very primitive Luwish script... an account of the expedition of a group of people who climbed the mountains and went in search of flat land.


Sanka, Swami (1968) - Decipherment of Inscriptions on the Phaistos Disc of Crete. The language is Indian.

Schachermeyr, Fritz (1964) - Die minoische Kultur des alten Kreta. He explains the differences between the disk, the Arkalochori axe, and the Malia altar stone by the existence of different schools of writing in different places and that they showed their independence from one another. For him, the walking man (no. 1) and flying bird (no. 31) signs are 'typical Minoan images of movement.'


Schomburg, Bernd (2000) - Der Jahrtausend-Kalender der Minoer. A Minoan calendar with 'schematic winding ideograms'. Free translation: 'Minoan calendar with directions for the measurement of the year and the millennium.'

Schwarz, Benjamin (1959) - 'The Phaistos disk' in Journal of Near Eastern Studies, 18, 2, 105-112. Mycenaean Greek, syllabic script. Related to Linear B. Late Minoan period. Descriptive phrases list the names of religious pilgrimage centers - 'Baalstere.'

Sittig, Ernst (1956) - 'Zur Entzifferung der minoisch-kyprischen Tafel von
The Phaistos Disk

Enkomi" in Minos, 4, 33-42. An early form of Greek.

Snowden, Clive (website) - A prayer in pictographs from Asia Minor. "The Phaistos Disc: deciphered? The General mightiness sought. The High Priest, The offering the greatest in Heaven. Many offerings were killed, The General a courier gave. To the greatest person in highest Heaven..."


Stawell, Florence Melian (1911) - "An Interpretation of the Phaistos Disk" in Burlington Magazine, 19, 97, April, 23-29, 32-38. Homeric Greek, syllabic script, possibly connected to a Cyprian script. A matrix for religious symbols for a prayer, "used in the traditional rites of a great goddess" such as Rhea, who was similar to Athena.

Stylos, Nikos (c. 1998) - Phoinik. Stylos claims to have translated both the Phaistos Disk and the Maglian Disk. He claims that the text was used for teaching people to read and that the language is "arbanetic."

Sundwall, Johannes (1927-28) - "Phaistos - Diskus" in Reallexikon der Vorgeschichte 10, 124-126. He compares the stamp technique of the disk to the decorative style of the Middle Minoan III seal impressions (the source for some of the signs on the disk).


Timm, Torsten (2005) - Der Diskos von Phaistos - Fremdeinflüsse oder kretisches Erbe? A Minoan stamp script, either syllabary or hieroglyphic, with a complete text, in conformity with Linear A. A reading of experiment. He compares 19 signs with Linear A.

Trauth, Michael (1990) - ‘The Phaistos Disc and the Devil’s Advocate’, Glotometrika, 12, 151-172. That it is of Cretan origin can no longer be called into question, but the language is not Greek.


Watson, Claire Grace (website) - ‘The Phaistos Disk Maze of Daedalus’. ‘The disk is a disk of the world that shows the Minoans’ religion and their reasoning about the Minoan Eruption and suns.’ The disk is a Minoan wave spiral on which is depicted the Aegean world of Minoan Crete, including a cave, a boat, a pyramid, a star, planets, a constellation, geometry, myths, and everyday life in Crete that mirrors the stars above.


Whitaker, Helen (2005) - ‘Social and Symbolic Aspects of Minoan Writing’, in the European Journal of Archaeology, 8, 1, 29-41. Writing was also used as a marker of status and prestige and for communication with the divine.

Whittem, Steve (website, 1995) - A calendar.


Winter, Dan (website) - The Isis-Osiris mystery myth. The disk, created c. 1600 BC, records the activities of the Isis-Osiris sect as they convened inside the Great Pyramid of Cheops and worked to establish their group consciousness using the tools of sacred geometry. It is a ‘portal disk using magnetic portal geometry’! Again, ‘pseudo-archaeology’ at its finest.

Woudhuizen, Fred. with an introduction by Jan Best (1992) - The Language of the Sea Peoples. From Anatolia – A resemblance to Luwian (Anatolian hieroglyphs). A Luwian letter to King Nestor of Achata sent from Phaistos. (See Jan Best.)

Zebisch, Herbert W. (Russian website, 2006) – It is written in a South Caucasian/Georgian language, Kartvelian, or Colchian (Kolkhian) – Mingrelian-Laz, spoken by the people of the Black Sea coast. The pictorial signs are ‘specimens of Colchian Goldscript... The Colchian language was spoken by the pre-Olympian Titans, the Sun-god Helios...[and] Queen Pasiphae, the wife of King Minos of Crete...’ The text... is a hymn ‘Nenana’, dedicated to the protector of ‘Aea-Nesikari’, Pelasgian-Colchian Great Mother Goddess Nan/Rhea-Cybele.

A number of the listings above of attempts to decipher the disk were derived from the book The Phaistos Disc: An Account of its Unresolved Mystery by Thomas Balistier and the websites of Mark Newbrook (http://www.bad-language.com/phaistos), Anthony Svoronos (http://users.otenet.gr/svoron nan/phaistos.htm), and Wikipedia: Phaistos disc. An important website: http://www.disque-phaistos.fr.

**Recommended Reading**


**Illustration Credits**


Bonnert, H. T. - Altkreta (1923): Fig 23.

Davaras, C. - Phaistos - Hagia Triada - Gortyn (n.d.): Fig 58.


Evans, A. J. - Scripta Minoa I, the written documents of Minoan Crete... (1909): Figs 3, 7, 24, 37-38, 44, 48, 52, 56.

Everson M. - Anatolian Hieroglyphs (2007, website), Draft N3236: Fig 8 (extract).

Farquhar, A. - Crossos: L’archéologie d’un rivage, fig 25.


Robinson, A. - Lost Languages: The Enigma of the World’s Undeciphered Scripts (2002): Figs 9 (extract), 10 (extract), 13, 14, 17, 18, 36, 42.


Wikipedia, Cestus: Fig 31.

Woudhuizen, F. - The Language of the Sea Peoples (1992): Fig 6 (after Milani, 1993), 34, 56.

www.ancientscripts.com/luwian: Fig 25.

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IN SEARCH OF HADRIAN

Sam Moorhead assesses the intriguing character of Hadrian and previews an innovative new exhibition at the British Museum.

He was in one and the same person both stern and cheerful, affable and harsh, impetuous and hesitant, mean and generous, hypocritical and straightforward, cruel and merciful, and always in all things changeable. (Scripores Historiae Augustae).

O n 24 July, a new exhibition opens at the British Museum, 'Hadrian, Empire and Conflict', which will enable a reappraisal of one of Rome's best known, but possibly least understood, emperors. The curator, and author of the associated book, Thorsten Opper, has secured 180 objects from 31 institutions to present a selection of material viewed together for the first time. Amongst the pieces are recently excavated finds from Turkey which are on show for the first time (Fig 2). For those of us who have already written about Hadrian it is a wonderful opportunity to reconsider our opinions of a man who strode his empire like a colossus, but whose character always seems to evade clear definition, as suggested by the quotation by his 4th century biographer (cited above). For the layman it will provide a rare chance to view the highpoint of the Roman Empire; traditionally, Ancient History courses on Rome at schools and universities used to end with the reign of Hadrian. Therefore, this exhibition in many ways epitomises the pinnacle of Roman achievement in the minds of Classical scholars.

Told through the life and reign of Hadrian, this story of Rome's greatness is full of violence, artistic brilliance, intrigue, and mystery. Although born in Rome in AD 76, Hadrian came from a provincial family in Spain that claimed its descent from veterans settled at Italica in c. 206 BC by Scipio Africanus after his campaigns against the Carthaginians in the Second Punic War. A number of influential families became very rich through metal mining and, in Hadrian's family's case, the export of vast quantities of olive oil to Rome. Eighty per cent of the broken oil jars on Rome's Monte Testaccio come from Spain. Hadrian was only nine when his father died, but it did mean that he was adopted by another powerful Spaniard and future emperor of Rome, Trajan (r. AD 98-117). Trajan favoured Hadrian who married Trajan's grand-niece, Sabina in AD 100 (Fig 7). Possibly even more important was Plotina, Trajan's wife, who was probably largely responsible for securing Hadrian's (controversial) adoption as emperor after Trajan's death.

Hadrian gained a great deal of military experience under Trajan, serving as a tribune three times and commanding a legion. Trajan, the Optimus Princeps ('best of Princes') was a belligerent man who conquered Dacia and thrust deep into Mesopotamia (modern Iraq), pushing back Rome's great foes, the Parthians, in 115. It was Hadrian who had to deal with the consequences of Trajan's overstretch. In 117 we are told that the Moors, Saracians, Britons, Egyptians, Libyans, and Judeans were all threatening trouble, although to what extent this is stock hyperbole on the part of the biographer we cannot be sure. Lesser men would probably have 'taken off uniform and mingled with the crowd', but Hadrian was decisive from the outset. He withdrew from Mesopotamia and redrew the eastern frontier at the River Euphrates, thus freeing up troops for use elsewhere. Hadrian also reformed the army, Disciplina Augusti becoming the catchword, and then set about securing frontiers in Germany, Britain, and North Africa. Unlike many previous emperors he did not act through proxy but visited and mixed with his troops, sharing their diet and dressing simply: 'By the soldiers he was greatly loved on account of his great attention to the army, and at the same time because he was very generous towards them.' (SHA). However, to suggest that he was the creator of a static military state behind defined borders is untrue – predecessors had already attempted to found frontiers,

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Fig 1. Bronze head of Hadrian found in the River Thames near London Bridge in 1884. 2nd century AD. H. 43cm. Inv no. PE 1948, 11031. Photo: © Trustees of the British Museum.

Fig 2. A marble over-life-size head of Hadrian being excavated at Sagalassos in Turkey in 2007. H. 70cm. Photo: courtesy of Sagalassos Archaeological Project.
notably Augustus in Germany. Furthermore, Hadrian could be ruthless towards his enemies. Antagonised by Rome’s policy about Jerusalem and circumcision, the Jews of Judaea rebelled under Simon bar Kokhba and destroyed three legions in 132. Hadrian’s response was incisive, even involving calling over his most experienced commander from that other hotbed of trouble, Britain. After four years of fighting, bar Kokhba was killed alongside almost 600,000 of his countrymen, Jerusalem was rechristened Aelia Capitolina (after Hadrian); more importantly, Judaea was renamed Syria-Palaestina, probably Hadrian’s most poignant and potent legacy to the modern world (Fig 3). It is no surprise that later Jewish writers inserted the phrase ‘may his bones rot’ after mentions of Hadrian’s name in the Talmud. Exhibits of simple possessions, such as baskets and house-keys, of Jewish rebels from cave sites in the Judaean Desert stand in stark contrast to the many imposing imperial artefacts elsewhere in the exhibition (Fig 5).

Hadrian’s martial prowess is shown by various depictions of him as a general in uniform or naked as the god Mars. However, as Oppen cogently demonstrates, Hadrian has often been regarded as an intellectual Philhellen, wonderfully evoked in a statue in the British Museum, from Cyrene, showing the emperor in Greek dress. One surprise sprang in the exhibition is that this is not in fact a statue of Hadrian, but an antiquarian construct – Hadrian’s head was in fact inserted on the wrong statue (Fig 4). This said, Hadrian was particularly keen on Greek culture – he was called ‘Graeculus’, supposedly when young he spoke Greek better than Latin, created a Hellenic League, and patronised numerous Greek cities, notably Athens. Oppen also claims that it was Hadrian who united the Greek-speaking world of the eastern Mediterranean, to the extent that later they embraced the cult of Antinous, Hadrian’s unfortunate lover who drowned in the Nile in AD 130.

Hadrian’s sexuality and relationship with the Greek boy Antinous has inspired many commentaries. As Oppen states, Hadrian’s relationship with Antinous would not necessarily have shocked other Romans; it was his amazing response to his lover’s death that really highlighted the relationship, Antinous’ image becoming one of the most common of the ancient world (Fig 6). I do wonder what happened on the Nile – was it an opportunity for rival courtiers in the service of Hadrian and Sabina to ally and remove a person who must have made their lives particularly difficult? Recent excavations have uncovered what appears to be an Egyptian-style shrine to Antinous at Tivoli, Hadrian’s enormous palace complex to the east of Rome. This would be entirely in keeping with a man whose passion for building was second probably only to the boy from Bithynia.

Travelling the empire today we are confronted by numerous monuments from Hadrian’s reign, whether they be the arches at Jerash in Jordan and at
Athens, the new housing quarters in Italica in Spain, or even the frontier walls in Britain and Africa. It has long been thought that Hadrian’s Wall bears the mark of the emperor, the initial design being a rigidly fixed system which one can imagine being drawn up by the emperor without due reference to the terrain – that it caused a headache for the soldiers who had to build the wall cannot be in doubt (Fig 8). The reason for building the various frontier walls is still discussed, but having been in Berlin in 1989-90 and having just returned from the Palestinian West Bank, I am well aware that walls are more than merely military devices.

In Britain, Hadrian might have also been responsible for a massive building at Stonea in the Cambridgeshire – it is thought that he drained the wetland Fens. In Rome, however, Hadrian left two substantial buildings. The Temple of Venus and Rome, sited on a platform between the Colosseum and Forum Romanum, was the largest temple to be built in Rome. When Hadrian asked Trajan’s celebrated architect Apollodorus to comment on the architectural plans, he criticised them, saying the podium was too low and that the heads of the seated gods would go through the roof when they stood up. Historical texts tell us that Apollodorus was executed or exiled for this criticism; modern apologists claim this is mere fiction. I am not so sure; Hadrian could be vindictive, and he did have a score, from many years before, to settle with Apollodorus.

More revolutionary, and of influence upon numerous later buildings, ranging from Hagia Sophia in Istanbul to the British Museum’s Round Reading Room, is the Pantheon (Fig 9). This building was completely rebuilt from two destroyed predecessors and was a triumph of the innovative uses of concrete and vaulting. The widest un-reinforced dome in existence sits atop a cylinder of elegantly decorated space where statues of gods and the imperial family stood, and where Hadrian held court when in Rome. The columns of the portico, weighing up to 100 tons, were transported all the way from Egypt’s Eastern Desert and the First Cataract of the Nile at Aswan. Not only did Hadrian’s grandiose building schemes in and around Rome attract exotic materials, masons and sculptors from across the Eastern Mediterranean, they also started a boom in the local brick industry, a business that enriched some of Rome’s leading families.

It is at Tivoli outside Rome that Hadrian was able to indulge his passions for architecture most of all. Here, in over 40 or more hectares, he built a wide array of innovative structures with numerous functions to house his court, visitors, and the many staff required to run an imperial palace (Fig 10). We have to remember today that the rather dull-coloured brick and concrete buildings would have been faced and decorated with rich marbles, mosaics, and frescoes, not to mention the numerous sculptures that stood all over the palace. To get a feel for what the buildings might have looked like inside, I urge readers to visit, in addition to the Pantheon, St Peter’s Basilica and Santa Maria degli Angeli in Rome where Renaissance artists emulated the splendour of Roman buildings, often with marble stripped from the originals. The exhibition will highlight the results of recent excavations at Tivoli, showing that it still has many secrets to be uncovered in the future. In many ways, Tivoli is a physical manifestation of Hadrian’s psyche – it was built away from Rome and its elements represented different parts of the Empire. Furthermore, it has grand, imposing and opulent monuments, reflecting the highpoint of the Roman Empire in its scale and physical reach; however, I find it very hard on a visit to feel the...
soul of either Hadrian or its inhabitants. Tivoli was the palace for an emperor who was often on the move, a man who appears to have gained more solace from travelling the empire, being amongst Greeks, and initiating more building projects, than he did from mingling with traditional aristocratic Roman society. Hadrian did attempt to court popularity in Rome, but failed. It took much persuasion on the part of Hadrian's successor, Antoninus Pius, to get the Senate to defy Hadrian - his new mausoleum, in all its opulence and dominating the north bank of the Tiber, was surely only appropriate for a god (Fig 11). The Senators apparently never forgave Hadrian for the execution of four of their ranks at the start of his reign, although he always denied he was responsible. He was undoubtedly more popular in the provinces and the Greek-speaking east, but our written sources reflect more the views of senatorial Rome. Furthermore, he wanted to see more of the provinces: 'He was, indeed, a most ostentatious lover of the common people. So fond was he of travelling that he wanted to learn further, at first hand, about that he had read concerning the different parts of the world' (SHA). This exhibition ought to help redress the balance by showing a more universal and less senatorial view of Hadrian.

However we might judge Hadrian, he was tiresome, a man with abounding energy. Not only did he spend half his reign touring the empire, he also multi-tasked in a manner reminiscent of Churchill: 'At one and the same time he wrote, dictated, listened and conversed with friends — if it can be believed' (SHA). We cannot deny that he consolidated the frontiers, strengthened the army, and made great strides towards unifying the empire. It meant that his successor, Antoninus Pius, did not have to leave Rome and only initiated one major campaign in Scotland. This action bears all the hallmarks of a carefully orchestrated propagandist event so as to give Antoninus military honours in a notorious region — the Caledonians were regarded in Rome as amongst the most barbarous of barbarians.

Hadrian does remain an enigma, 'Diverse, manifold and multif orm' as written by the author of Epitome de Caesarius, and I do look forward to this new exhibition because it will provide me with the chance to re-appraise my views of a man who has always impressed me. However, I have never felt any affection for Hadrian. It might just be that the 'joking soul' he refers to in his death-bed poem might be flattering the Round Reading Room, opening our eyes to likeable facets of Hadrian's character. Will it comment on the fact that Britannia, who first appeared on Hadrian's coins, has just been removed from our 50p piece by the Royal Mint. This is the first time that she has been relegated from our coinage in 350 years, ironically at a time when our Prime Minister, a Caledonian, is promoting Britishness, but flying the Cross of St George over Downing Street — do we need Hadrian to come back and re-brand us again?

"Hadrian: Empire and Conflict" is at the British Museum 24th July – 26 October 2008. Sponsored by BP. A catalogue with the same name by Thorsten Opper, is published by British Museum Press (2008; 250pp, 210 colour and b/w illus; paperback, £12.50).

For further information, see www.thebritishmuseum.org.
FROM CAVE TO CHURCH:
THE ORIGINS OF EARLY WALES

Mark Redknap introduces the new archaeology galleries at National Museum Cardiff.

In 2007 Amgueddfa Cymru-National Museum Wales celebrated its centenary year. One of the highlights of the centenary programme was the development of new archaeology galleries at National Museum Cardiff (Fig 2). They have now been spectacularly redesigned, with a new focus on survival, society, and status, exploring aspects of change from the arrival of the first hominins (humans) to the end of the Middle Ages.

The National Museum Wales was founded in 1907, and is now a multisite organisation. The Museum, in the centre of Cardiff, has been the focus for Welsh archaeology since its opening in 1927 (Fig 1). Its internationally renowned archaeological collections had their beginnings in the modest founding collection of Cardiff Museum and Art Gallery. Under the aegis of archaeologists such as Sir Mortimer Wheeler (Director 1924–26) and Sir Cyril Fox (Director 1926–48), the Department of Archaeology & Numismatics developed a dynamic combination of collecting, research, excavation, display, and publication, which continues today.

While the former archaeological displays installed in the late 1970s were innovative for their time, they were inflexible, and offered outmoded interpretations and display conditions. As part of an extensive programme of development and refurbishment of National Museum Cardiff, the decision was made to move the archaeology displays to the ground floor of the East Wing, incorporating them into the galleries which lead off the Main Hall.

In pulling the narrative together and reinterpreting the collections thematically, the curatorial team set out to explore the relationship between past lives and the present, humanising the stories behind the objects displayed — some new, some old. Of the 1783 objects displayed, 1104 were not exhibited in the old galleries. The exhibition has a clean, simple, flexible installation style and uses chronology as a map within the gallery, providing visitors with a clear orientation within time.

The exhibition begins with a ‘skull wall’ that puts the 230,000-year-old teeth from Pontnewydd Cave in north Wales – Europe’s most northerly Neanderthal remains – into context. Many famous and iconic discoveries are on show, some for the first time. The ‘Red Lady of Paviland’ from the Gower Peninsula (Fig 3) is on loan from Oxford University Museum of Natural History, in what is the first exhibition in Wales of these internationally significant Gravettian (Early Upper Palaeolithic) remains. The male skeleton was excavated in 1823 by Professor William Buckland, who glossed over the evidence for its extreme age and argued it represented an ‘excuse man’ and later a Roman camp follower (female). Later recognised as western Europe’s oldest known formal ceremonial burial, it has now been radiocarbon dated to around 29,000 years ago — significantly placing the burial in a period of slightly warmer climate than previously thought. Some of the accompanying artefacts are also displayed.

Treasures include the remarkable Bronze Age hoard of gold jewellery and tools (Fig 4) from Burton near Wrexham (c. 1300–1150 BC); the gold lunula from Llanllynfi, Gwynedd (c. 2200–2000 BC) and the jet spacer necklace from Pen-y-Bont, Holyhead, Anglesey (c. 2200–1700 BC), both on
Fig 3 (left). The ‘Red Lady’ of Paviland Cave on the Gower Peninsula in south Wales, western Europe’s oldest known formal ceremonial burial, 29,000 years old.

Fig 4 (middle left). Twisted gold wire bracelet from the exceptional group of Bronze Age gold jewellery and bronze tools found at Burton, Wrexham in 2004 (c. 1300-1150 BC).

Fig 5 (below left). The visually powerful Capel Garmon find from Conwy, now dated to the 1st century AD. According to Stuart Piggott (1973), it ‘stands out from all the other British and Continental pieces in its elaboration and rococo flamboyance’.

Fig 6 (below right). ‘When looks could kill’: mannequin of a warrior with a Bronze Age shield discovered at Gwern Emion, Llanbedr, Gwynedd (c. 1000-800 BC) and socketed spearhead, part of the Gulisfield Hoard, Powys (c. 1050-900 BC).

loan from the British Museum; the Caergwrle Bowl, a representation of a boat in shale, tin, and gold foil (c. 1300-1150 BC), discovered in 1823 close to the River Alun by workmen; the fragmentary Cerigedydrudion Crown, decorated in the La Tène style (400-300 BC), shown with a new reconstruction by Nodge Nolan; and the Iron Age find from Capel Garmon – half ox, half horse (Fig 5) – described as ‘a masterpiece of Celtic blacksmithing’ (1st century AD).

In the early medieval zone, post-Roman inscriptions and later free-standing crosses (Fig 10), such as the spectacularly decorated cross shaft of ‘Eludon’ are integrated with early medieval hand-bells, Viking-aged swords and jewellery, such as the silver and gold penannular brooch from Newton Moor in the Vale of Glamorgan. Closing with the impact of the Reformation from the 1530s, exhibits include the rare late 13th-century rood figure (a crucifix) from Kemesy Inferior church, Monmouthshire, and a late medieval wall painting showing the ‘Mocking of Christ’ from the church of St Tello, Llandeilo Tal-y-bont, near Swansea. This redundant church, offered to the museum in 1984, has now been re-erected and refurbished with reconstructions of its pre-Reformation wall paintings at St Fagans National History Museum, situated just outside Cardiff.

New discoveries on display include unfinished Neolithic stone axes, hammerstone and waste flakes from Dr Steve Burrow’s excavations at Myndyd Rhiw, Gwynedd (c. 3750-3050 BC; Fig 15), and a late 1st/2nd century AD bronze vessel hoard from Manorhir, Pembroke. Another early Roman bronze vessel is a cup of Mediterranean form with an exquisite spotted leopard handle (Fig 11) found recently in a burial near Abergavenny, Monmouthshire (1st century AD). This may be contrasted with the Trawsfynydd tankard, a drinking vessel in the native Iron Age tradition with an elaborate handle in late La Tène style (c. AD 1-50), on loan from National Museums Liverpool. A donkey mill discovered at the 1st century AD fort at Clyro, Powys, in 2004 (Fig 10), indicates that the fort probably acted as a supply base during the Roman campaigning in Wales. Also featured is the right hand panel from an elephant ivory diptych made in Paris about AD 1340-60, found at Llandaf just outside Cardiff in the 1840s (Fig 13). This has been reunited with a laser cut replica of the left panel, separated long ago and identified in 2006 in the collections of National Museums Liverpool.

Contextualising the collections and making that all important link between artefact and provenance, gallery space and landscape, has been achieved through photographs and monitor presentations, incorporating images provided by the Royal Commission on the Ancient and Historic Monuments of Wales and Cadw.

Another element of the exhibition focuses on the world beyond Wales, and the concept of common inheritance. The first of its changing displays features three Corinthian helmets (two of early type, c. 700-650
are used, while newly commissioned art, animation, music, and photography have been incorporated to extend contemporary references within the exhibition: archaeology as a spur to creativity. Cardiff composer and sound artist Simon Thorne was commissioned to write music for the Palaeolithic zone. Asking the question ‘why did we ever make music in the first place?’, he has composed a piece for the Introduction to the gallery entitled ‘Neanderthals’, exploring expression through song rather than speech.

Banners by Mary Lloyd Jones have been inspired by Neolithic rock art and artefacts, and early medieval inscribed stones (Fig 15). Describing her visits to the remarkable Neolithic chambered tombs of Barcloyd y Gawres and Bryn Celli Ddu on Anglesey in locations ‘both dramatic and numinous’ as a constant inspiration, as a painter she has been able to extend her vocabulary of marks by borrowing from prehistoric artists. Bryn Celli Ddu is, apart from Stonehenge, the only Neolithic monument aligned on the mid-summer solstice which can still be seen.

In a unique blend of art and archaeology, multi-media work has been created by artist and animator Sean Harris (Fig 14), who has animated Bronze and Iron Age objects such as one of the two Llyn Fawr cauldrons in a piece that conveys the power and resonance of such objects

BC, one of mature type, c. 600-500 BC) which form part of the collection of ancient arms and armour assembled by Thomas Evelyn Scott-Ellis, the 8th Lord Howard de Walden (1880-1946). He left the pre-classical and classical pieces from the collection to the National Museum Wales on his death in 1946.

One of the greatest challenges is to make the distant past relevant to many audiences today. Experimental juxtapositions of artefacts and images to create resonances and meanings

Fig 7 (above left). ‘Power Dressing’: a mannequin of a priestess or aristocrat wearing Bronze Age gold torcs, armlets, and rings (c. 1500-800 BC) displaying power and status in early Wales.

Fig 8 (above right). Dazzling display of horse power: hoard of jewels and harness fittings, possibly of French origin, from the Parc-y-melrich hoard, Dinorben, Conwy (c. 1150-900 BC).

Fig 9 (right). Detail showing an enigmatic head decorating one of the copper-alloy shield plaques in a ‘Celtic’ style from the Tal-y-llyn hoard, Gwynedd (AD 40-80).

Fig 10 (below left). The Roman and medieval displays within the new ‘Origins’ galleries. At right, the donkey mill excavated from the 1st-century AD Roman fort at Clyro, Powys.

Fig 11 (below right). The bronze Roman leopard cup of a Mediterranean form recovered from a burial at Abergavenny, Monmouthshire (1st century AD).
within early Wales: 'Over the last few years I have been privileged to have some of these extraordinary play-things. I entered a cathedral', he said of the museum, 'and it became a playground'. Earlier work by Sean Harris includes that with the pupils of three different countries to produce an animation on the 'Hunting of the Twrch Trwyth' from the Mabinogion (collection of medieval Welsh tales), for an exhibition entitled 'Gathering the Hosts of Britain and Ireland'. Photographer Daniel Salter's commissioned photographs provide visual links to Wales and the world today. David Nash, internationally renowned for working with wood and tactile sculptures, has loaned a charred wooden work as a counterpoint to early medieval stone crosses.

The importance of the exhibition lies not only in its highlighting archaeological treasures from Wales, but also the manner of their contextualisation. Fresh interpretations based on new research and discoveries are combined with evocative juxtapositions of artefacts, images, poetry, and contemporary art that are enthralling visitors.

Images - Figs 1-11, 14-16: Courtesy of the National Museum of Wales; Fig 12: © Her Majesty Queen Elizabeth II; Fig 13: copyright National Museums Liverpool.

'Origins: in search of Early Wales' at National Museum Cardiff (admission free) is open Tuesday – Sunday and Bank Holiday Mondays, 10am – 5pm. To pre-book BSL tours and group tours call (029) 2057 3325. For further information: www.museumwales.ac.uk.

Fig 12 (above). Detail of Christ in Majesty on a silver gilt paten discovered with the famous Dolgellau chalice (c. AD 1230-50) on the hillside of Cwm Mynach above Dolgellau, Gwynedd, in 1890.

Fig 13 (middle left). The right panel of an ivory diptych found in the 1840s at Llanlaf, Cardiff, reunited with the left panel, identified in 2006 in the collections of the National Museums Liverpool. Copyright: National Museums Liverpool.

Fig 14 (below left). Animation by Sean Harris, incorporating one of the cauldrons from Llyn Fawr, Rhondda Cynon Taf (c. 800-600 BC) and bronze buttons from the Pencrywch hoard (c. 1150-900 BC) as shields.

Fig 15 (below right). Banner by Mary Lloyd Jones, inspired by artefacts and marks made by Neolithic people in Wales, beside a case containing unfinished axes and waste from Mynydd Rhw, Gwynedd (c. 3750-3050 BC).
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SOLVING STONEHENGE: THE KEY TO AN ANCIENT ENIGMA

Anthony Johnson presents a groundbreaking interpretation of Britain's most iconic site.

The renowned astronomer Edmond Halley visited Stonehenge in 1720 and, working with his friend, the antiquarian William Stukeley, conducted the first ever scientific experiment in dating archaeological remains.

Consequently this set in motion a preoccupation with alignments and astronomy at Stonehenge that has endured to the present day. Stukeley, a doctor by profession, brought a keen sense of observation into his fieldwork. He noticed that the entrance to Stonehenge was aligned approximately towards the midsummer sunrise, though it did not, in his own words 'correspond to the quantity precisely enough'. Therein Stukeley saw a remarkable opportunity; if he believed, the stones had been set out using a form of magnetic compass with 'the needle varying so much, at that time, from true north', the perceived error in the monument's alignment might be the result of historic variations in the earth's geomagnetic field. If he and Halley could determine the angular shift, the declination, it would be possible to arrive at the date for the construction of Stonehenge. Halley proposed that geomagnetic variation followed a regular cycle, and that every 700 years the compass needle returned to the same point with regard to geographic north. Using this guide, their observations suggested three possible dates for the construction of Stonehenge: c. 460 BC, AD 220, or AD 920, the earliest date being the one accepted by Stukeley.

Of course we now know from a series of reliable radiocarbon dates that the construction of Stonehenge was much earlier. The first earthwork and timber circle was created close to 3000 BC, the relatively small Welsh 'bluestones' introduced perhaps 500 years later, followed shortly afterwards by the construction of the massive iconic sarsen sandstone structure (Fig 1). In Stukeley's day the idea that Stonehenge was a pre-Roman structure was not widely accepted. Some 80 years earlier the English antiquarian and writer John Aubrey concluded that stone circles in general were so 'exceeding old, that no Bookes doe reach them'. In this eloquent single phrase he anticipated the concept of 'prehistory', a word that would not be coined for almost another 200 years. Stukeley, a founder member of the Society of Antiquaries and a Freemason, later to be ordained as a clergyman, desired and needed Stonehenge to be an 'Ancient British' construction. He imagined it as a work inspired by descendants of the Biblical patriarchs, its design and dimensions influenced by the Temple of Solomon and presided over by a priestly order of Druids.

There was much intrigue to follow, with a considerable amount of often vitriolic exchange between antiquarians and learned men of the day who vigorously disputed the origins and function of Stonehenge. John Wood, the famous architect of Georgian Bath, made the first accurate measured survey of Stonehenge in 1740 (Fig 2). However, Stukeley considered this work to be nothing more than a 'nonsensical, impertinent and needless, measuring of the stones... a tedious parade of twenty
pages of feet, inches, halfs, and quarters. Despite Stukeley's verdict that Wood was a man of 'crackt imagination', this survey has proved to be the most important record of the monument ever made: at the end of the 18th century one of the massive trilithon structures of the Inner Horseshoe collapsed, followed over the next two centuries by the demise and movement of several other major stones.

The early antiquarians opened the way to a new understanding of ancient monuments, one largely unfettered by the fanciful myths penned by the writers of the Middle Ages. It was now apparent that it was possible to learn from the structures and material evidence themselves, and that there was a temporal dimension to explore beyond that contained within the pages of the Bible and the Classical Greek and Roman texts. We have, of course, moved on, the early scientific experiments and curiosity-driven excavations have been transformed into the discipline of modern archaeology (Fig 9). Yet, curiously, Stonehenge, arguably our most iconic prehistoric structure, remains in one remarkable respect a backwater. Our understanding of the site is still encumbered by the history of the burden of theories which have elaborated on Stukeley's observation that the entrance faces the midsummer sunrise. Over the intervening 250 years the solstice alignment has mutated into a widely held belief that the prehistoric mind was focused entirely on the theatre of the celestial dome (Fig 4).

Need we really be surprised that the most important work of prehistoric architecture in Europe was placed on a significant cardinal alignment? Does this necessarily imply that the whole structure is of astronomical significance, with every stone having some cryptic numeric meaning? Prodigious interpretations and a preoccupation with putative alignments have hidden the fact that there is another equally, if not more important, dimension to Stonehenge. Locked within the iconography of Later Neolithic and Early Bronze Age Britain is a language known to the scholars of classical antiquity, and no less familiar to us today: the elegant and universal symbolism of numbers and geometry. The archaeological evidence conspires to tell us that the monument was designed and constructed from a carefully premeditated 'architectural blueprint' by people who had skill not only in engineering but who also developed a sophisticated understanding of geometry and mathematics. In short, it was conceived on the prehistoric equivalent of a drawing board, the stonework largely prefabricated and then set out on its intended site, not by 'astronomer priests', rather by 'draughtsman surveyors'?

There are clues in the archaeological record which take us on a remarkable journey into the sublime prehistoric dimension. The order of construction revealed by archaeological excavation suggests that the principal focus of interest was the
midwinter sunset, which the Great Trilithon was designed to face (Fig 8).

The monument sits astride the ‘solar corridor’ of the midwinter-midsummer axis, but within the earthwork not one single stone of the mirrored symmetrical plan deviates from the master geometric model. The idea of dividing the year into two halves, summer and winter, light and dark, with themes accommodating the concept of duality of the natural and spiritual world into harmonious domains may explain the preoccupation with symmetry, which was expressed in both monuments and contemporary artefacts.

Stonehenge stands at the dawn of the Western European metal age, a dynamic period in which a technological revolution was about to transform the established order forever. It brought wealth, power, and status to the people of the southern chalkland of Salisbury Plain in much the same way that the agrarian economies of Mesopotamia had flourished a thousand years earlier by exerting increasing control over traded commodities and outlying sources of raw materials. The communal burial places of Neolithic ancestors, the already ancient long barrows, were abandoned. Around, or shortly after the period of major structural activity at Stonehenge, smaller round barrows of the Beaker Period began to appear in the landscape. Soon these were overtaken by the larger classic earthen round barrows of the so-called Wessex Culture. Within some of these mounds examples of remarkably sophisticated metalworking have been found, some displaying a quality and craftsmanship that would rival the work of any age to follow. Amongst them are elegant geometric artefacts, perhaps the most spectacular being the gold lozenges found in 1808 in a burial mound known as Bush Barrow, 1km to the south-west of Stonehenge (Figs 5, 6).

The large gold lozenge, part of an extensive range of grave goods which also included a smaller example, accompanied a man of high status who was interred some time after 1700 BC. We do not know how old the artefact was when buried, but at this time Stonehenge was still being embellished (the enigmatic Y and Z holes, for example, had probably not yet been cut).

Within the design of the Bush Barrow lozenges we see more than the confidence and skill of a prehistoric master craftsman, for their inscribed motifs yield clues that tell us beyond doubt that a mature and sophisticated knowledge of geometry existed in Britain shortly after Stonehenge was constructed. Analysis shows the Bush Barrow examples to be based on a hexagon and circles, but a little farther south, at Clasdon in Dorset, another barrow yielded a similar lozenge whose decorative motif was based not on hexagons, but the remarkable and creative use of a decagon (Fig 7).

Similarly, computer analysis has revealed that the early circuit of 56 ‘Aubrey Holes’, the first (dismantled) bluestone settings, and the iconic sarsen monument were all geometric constructions, and field experiments have confirmed that using these elegantly simple geometric principles the ground plan of the sarsen monu-
ment can be re-created by two people in 2.5 hours using a single length of rope and a few wooden pegs (Fig 13). The prehistoric surveyors and engineers translated their 'design blueprint' into a largely prefabricated structure. Then, with skills no less impressive than those employed in moving the stones themselves, they set the centre faces of the massive sarsen uprights against their survey marker pegs to tolerances of just a few centimetres. Moreover, this was all achieved without the need for measured dimensions, for the virtue of a geometric design is that it is infinitely scaleable from concept to construction.

A preoccupation with finding a single grand 'explanation' means that countless small but vitally sig-
ificant archaeological facts have been overlooked. It is within the details of the construction that real clues to the mindset behind the design of the monument can be found (Figs 10-12).

Convoluted and outlandish interpretations must now yield to a new spirit of enquiry led by archaeological research. Theories marginally supported by selected facts serve only to create modern myths; it is time to move on. The muses and diversions of the antiquarian world around which every popular vision of Stonehenge has been fabricated do not need underpinning, they need to be challenged and tested against the material evidence.

Fig 11. General plan of Stonehenge.

Fig 10. Computer-generated reconstruction of Stonehenge from the south-west.

Fig 12. The prehistoric surveyors laid out the trilithons using the markers for the Sarsen Circle and the two axis intersects (A1 and A2). This figure illustrates the relationship between trilithon uprights S3-S4 and S7-S8, the axis, and pegs marking the Sarsen Circle.

Fig 13. Survey experiment to re-create the prehistoric surveyors' marker pegs for the Sarsen Circle and trilithon array, at actual size.

Illustrations - Fig 1: Adam Stanford, Aerial Cam; Fig 2: Bath Preservation Trust & Bath Museums; Fig 3: Trustees of Sir John Soane's Museum; Fig 4: James Mitchell, Figs 5, 7: Dr David Clarke, National Museums Scotland, Edinburgh; Figs 6. 10-13: Tony Johnson; Fig 8: Sean Johnson; Fig 9: Wiltshire Archaeological & Natural History.

This article is adapted from Solving Stonehenge: The New Key to an Ancient Enigma by Anthony Johnson (Thames & Hudson, London, 2008; 288pp, 139 illus, 45 colour pls. Hardback, £19.95). For further information: www.solvingstonehenge.co.uk.
THE ROMAN ALGARVE: GARUM RIVIERA OF LUSITANIA

Mark Merrony

The highly prized fish sauce of antiquity. These were in a convenient geographical location to take advantage of mackerel, sardines, and tuna, migrating from the Atlantic to the Mediterranean, and the lucrative maritime export of this commodity to Rome from the port of Lacoberia (modern Lagos), Vilamoura, and elsewhere on the coast. Amphora sherds excavated from kilns at Martinhal indicate a large-scale production of vessels specifically for the Roman market. This is borne out by the discovery of amphorae in Rome and elsewhere in Italy directly sourced to this site.

Abicada is the most poorly investigated and preserved garum villa in the region. Located off the beaten track about 50km west of Faro, the site was discovered, and initially excavated, by José Farrajota in 1963, and in subsequent decades excavations have been undertaken by José Luís de Matos. In terms of its commercial raison d'être, the villa is ideally placed about 10m above sea level adjacent to a natural harbour, which functioned as a port in antiquity. Archaeological evidence indicates that the complex was constructed in the early 1st century AD, subsequently embellished in several phases, and abandoned in the 5th century.

As might be expected, the villa shares similar characteristics to other provincial villas, which represent a fusion of the Italic atrium style house with the Hellenistic peristyle dwelling incorporating a porticus, colonnaded hall, a triclinium (dining room), private quarters, and a private bath-house contain-
ing a caldarium (hot bath), frigidarium (cold bath), and tepidarium ( tepid bath). Many of the rooms preserve a variety of non-repetitive floor mosaics with a similar range of patterns to those at Abicada. The remains of several store rooms and two towers are present on the southern side of the villa. Towers on villa façades are depicted on several mosaic floors in North Africa, and many examples of this characteristic are known from villa remains in the eastern Provinces of the Roman Empire.

Approximately 100m to the south-west of the villa complex are the salting tanks for garum production. These are rectangular in plan, measuring around 2 x 1.5m and fed by an aqueduct (Figs 6, 7), discharging their overflow into an effluent channel. Historical texts record that the condiment was made by fermenting and salting fish for up to three months. Ironically, the earliest description of how garum was produced comes from the astrological treatise on astronomy written by Manilius in the 1st century AD. This relates how fishermen processed their catch of tuna on the shore by cutting them into small pieces and flavouring the choicest part of the blood to give a 'relish to the palate' and the remaining parts of the fish to provide a 'condiment of general use'. Smaller fish were fermented in dolia (large jars) in which 'their inward parts melt and issue forth as a stream of decomposition' (V. 667-681). Garum and its production is similarly described in Pliny's Natural History as 'consisting of the guts of fish and the other parts that would otherwise be considered refuse; these are soaked in salt, so that garum is really liquor from the putrefaction of these matters' (XXXI.93). Pliny also informs us that the term 'garum' derives from 'garun', the fish used by the Greeks to prepare it.

Historical writers also record that the production of garum was an odorous process. According to an epigram by the Roman poet Martial, he commended any man who could maintain his ardour for a girl who enjoyed large helpings of garum (XL.27). This factor explains the need for a copious water supply and drainage, a characteristic of the installation at Cero da Villa, and this may also be linked to the presence of a separate bath-house to the east. Functionally, this would have proved a boon to the garum producers who probably occupied the houses to the south of the bathing complex, and it almost certainly also provided a public amenity for other residents in the port area. This is a standard complex equipped with a natatio (swimming pool), apodyterium (changing rooms), caldarium, frigidarium, tepidarium, and laconicum (sauna), and orientated west-east to take full advantage of the afternoon sun.

Sampling the excellent full-bodied red wine and delicious olives of the Algarve leads to the instant conclusion that it would have been a prodigious wine and olive producing region in the Roman period. This is borne out by the grandiose villa at Milreu, which in contrast to the garum producing complexes at Abicada and Cero da Villa, functioned as a wine and olive oil production centre. This is located about 10km inland to the north-east of Faro and was discovered and subsequently excavated by the local archaeologist.

**Fig 3** (below left). Reconstruction watercolour of Roman Cero da Villa by José A. Cavaco.
**Fig 4** (top right). The frigidarium (cold pool) in the bath-house of the main villa complex.
**Fig 5** (right, second down). Geometric mosaics of the first and second entrance halls.
**Fig 6** (right, third down). Cetarium (fish salting tank) with detail of drain in the industrial processing area to the south-west of the villa complex (D. 1m, L. 2m, W. 1.5m).
**Fig 7** (bottom right). Cetaria in the industrial processing area fed by an aqueduct from the villa. The visitor centre of Cero da Villa is visible in the background at right.
Sebastião Filipe Mes Martins Estácio da Veiga in 1877. Archaeological evidence indicates that the villa was constructed in the 2nd century and embellished in the 3rd and 4th centuries. This site is laid out on such an impressive scale that it gave the writer the initial impression that it was a Roman town on his site visit in 2007. This is borne out by its first description by da Veiga: 'I discovered an opulent housing complex with 58 rooms, residential houses, industrial workshops, storerooms, a drainage system...and the pagan town cemetery, completely separate from the monumenta, and Christian tombs which surround the majestic temple of the Corinthian Order.' His reference to the pagan town cemetery was founded on the mistaken assumption that he had discovered the ancient town of Ossonoba, which lies mostly buried under modern Faro.

Again, this villa is typical, consisting of an atrium-peristyle-triclinium arrangement. Most of the rooms are located to the south, and the impressive bath-house to the south-west, to take advantage of the afternoon sun. The plunge pools and peistyle area are decorated with mosaics depicting swimming fish, dated on stylistic criteria to the mid-4th century. Similar mosaics are known from Braga in northern Portugal and Pañón in northern Spain, and it is plausible that these were all manufactured by itinerant craftsmen from the same artistic circle. These are technically superior to the non-representational floors elsewhere in the residential part of the villa, dated to the 2nd and 3rd centuries by pottery and coins respectively.

The north side of the triclinium preserves a staggering testimony to the production of olive oil on an industrial scale – a 27m-long room containing five oil-presses (Fig 11). The installation includes the remains of the lead pipes used to drain the pressed oil, and 36 olla (jars), for its storage in the cellars, and an access ramp to the level of the main villa. To the east of this installation is the wine production area (Figs

Fig 8 (below left). Plan of the oil and wine producing Roman villa complex at Milreu.
Fig 9 (above right). Eastern peristyle mosaic with dolphins, fish, and shellfish in a geometric frame looking south towards the remnants of the peristyle columns and the water sanctuary.
Fig 10 (middle right). Northern peristyle mosaic decorated with saw tooth motifs.
Fig 11 (below right). General view of the olive oil pressing installation from the south-east.

Minerva, July/August 2008
13, 14). Although much of this installation is eclipsed by a medieval church, there are sufficient remains to indicate that this was an installation of a common type throughout the Roman Empire, comprising a tank for crushing the grapes, a tank for the grape must, a pressing and storage area (in dolia). This process is graphically represented on a 3rd century mosaic floor in the house of the Amphitheatre at Merida in Spain. (Fig 15). As expected, the industrial quarter is provided with several rooms, which would have functioned as the living quarters of the estate workers.

What sets this site apart is the inclusion of an impressive 4th-century temple to the south-east. The brick core of this - enclosing a tall cela and low pedi-

Fig 12 (top left). Jars (dolia) in the cellar area for the storage of olive oil after pressing.

Fig 13 (left, second down). Main collection vat for wine processing in the vault of the church.

Fig 14 (left third down). Collection vat for grape must in the wine processing area.

Fig 15 (bottom left). Floor mosaic in the House of the Amphitheatre at Merida in Spain depicting grape harvesting scenes and three men treading grapes. Mid 3rd century AD.

Fig 16 (top right). The water sanctuary viewed from the north. The low podium and high cela are characteristics of the ambulatory type known elsewhere in the North-western provinces of the Roman Empire. Early 4th century AD.

Fig 17 (middle right). South wall mosaic of the water sanctuary pool, depicting the context-specific iconography of a dolphin and fish in an especially fine technique for the 4th century AD; typically mosaic cubes exhibit a more coarse density in this period.

Fig 18 (bottom right). Reconstruction of the water sanctuary building as a Gallo-Roman temple in the early 4th century; similar to examples in Britain, Gaul, and Germany.
excavations of the 19th century. The first, discovered near the Water Sanctuary, is of Julia Agrippina (AD 15-59), wife of Claudius (r. AD 41-54), mother of Nero (r. AD 54-68). This charming representation is defined by a well-modelled face, fine nose, a coiffure of fine ringlets, and is similar to examples in Florence and Milan (Fig 19). A bust of Hadrian (r. AD 117-138) was found in the same area and may well confirm the association of the sanctuary with the Imperial Cult (Fig 21). This conforms to an archetype of the emperor wearing a paludamentum (cloak) with his hair brushed forward curling over his forehead. The third example represents Gallienus (r. AD 253-268) with a severe expression combining a coiffure of curls and layered hair (Fig 22). An especially fine head of a woman, thought to be from the Hadrianic period, is perhaps the best of the Milreu sculptures (Fig 20). She has especially fine features and a noble hairstyle, curled and pinned in three tiers, characteristics that identify her as the domina of the villa or possibly an aristocratic relative.

Perception of how these rural villas interacted with local urban centres is complicated by subsequent development from the Roman period through to the modern era, as in the case of other ancient cities, such as Alexandria and Constantinople (Istanbul). This is particularly the case with the coastal cities of ancient Osmosoba (beneath Faro) and Balsa (beneath Tavira). These cities were first colonized by the Phoenicians, chosen for their sheltered location behind a lagoon. A Phoenician origin is certainly implied in the second instance by its name ‘Balsa’, deriving from the Phoenician deity Baal Shem. Naturally these cities have yielded some interesting objects and these are scattered in museums and private collections across Portugal (Figs 25-27).

Thanks to the tourist building boom and a diligent, localised programme of rescue excavation and survey in developed and developing areas, regional experts have managed to gain an impressive insight into the Roman character of these two cities, especially through the excellently reconstructed plans of Luís Fraga da Silva (Figs 23, 24). These paint a picture of two centres equipped with the urban amenities characteristic of Roman cities, with well-planned streets laid out on a grid, and the usual array of public buildings (fora, temples, amphitheatres, theatres, circuses, bath-houses, and markets) and private houses. Impaired by a lack of inscriptions to identify the owners of the hinterland villas, it is certain that these were the rural estates of wealthy city officials (curiales) who combined their centres of production with the
city markets and their ports for local and international consumption.

The archaeological sites in the Algarve may well be off the beaten track for the majority of Romanophiles, but the sheer quality of the sites in the region, coupled with the lack of crowds, make it an irresistible addition to the modern ‘Grand Tour’. This is likely to change as Portugal’s ballooning tourist industry realigns itself with the lay public’s increasing obsession with the Classical world fuelled by popular film and television. Garum may now be out of gastronomic fashion in the Algarve, replaced by the humble but delicious sardine, but the backbone of the economy in the Roman period - the fish-olive-wine trinity - remains broadly the same, and is as big a draw to modern tourists as its natural beauty.

Fig. 25 (left). Marble bust of Anna Galeria Faustina, wife of Marcus Aurelius, discovered in Balsa. AD 135-140.
H. 56cm. Évora Regional Museum.

Fig. 26 (middle right). Limestone Dionysiac plaque from Balsa. Mid-1st century AD.
H. 21cm, L. 29cm. Private collection.

Fig. 27 (bottom right). Marble statuette of Fortune, Isis, Dea Anna (goddess of the corn supply), or Patron goddess of Balsa, found at Balsa.
Late 2nd or early 3rd century AD. H. 42cm.
National Museum of Archaeology, Lisbon.

The writer would like to thank Sonja Frisell-Schroeder for arranging the visits to Abicada, Cero da Villa, and Milreu.

Illustrations -
Figs 1, 4-7, 9-17: Mark Merrony;
Figs 8, 18: Portuguese Ministry of Culture;
Figs 19, 21: Archaeological Museum, Faro;
Figs 20, 27: National Museum of Archaeology, Lisbon; Fig. 22: Luís Fragão da Silva; Fig 25: Évora Regional Museum.
ne of the more curious aspects of our knowledge of the archaeology of Roman North Africa is that so few Roman villas at the luxury end of the scale have ever been fully excavated and published. Many farm sites are known – the agricultural nerve-centres for the production of oil and cereals, and to a lesser extent wine, on which the prosperity of Roman North Africa was based. Some of these, especially in Tripolitania (western Libya), are in an exceptional state of preservation, but wealthy villas are another matter. True, there are isolated bath-houses richly adorned with figured mosaics, like the one at Sidi Ghrib, 50km south-west of Carthage, excavated in the early 1980s, or the 19th-century discovery of baths which belonged to a certain Pompeius at Oued Athména, 32 km south-west of Constantine in Algeria. Both of these lay adjacent to unexcavated residential villas, but the number of such sites is small.

That is what makes the Roman villa at Silin so exceptional in a North African context. The site lies right on the sea (Fig 1), 13km west of the great Roman city of Lepcis Magna in what is now western Libya. It was discovered by accident in 1974 and was excavated and restored over the ensuing years by the Libyan Department of Antiquities, under the direction of Omar Al Mahjub; but although its mosaic pavements have been the subject of two preliminary reports, it remains unpublished in detail. Sadly, Dr Al Mahjub has now died, and responsibility for the definitive publication has been entrusted to Professor Luisa Musso of the Università of Roma III. In the last few years the villa has been open to the public, although it is currently closed: the cover buildings are in urgent need of maintenance, as are the mosaics, which are beginning to ‘blister’ in places.

How the villa was entered in antiquity is not clear. We do not know if the central peristyle (Fig 2) was closed on a fourth side or turned outwards to form a colonnaded passage in front of rooms 8 and 15, since part of the complex here has been destroyed by the sea. But it seems certain that no actual living rooms have been lost on this side. The central space, presumably planted as a garden, is flanked on three sides by corridors; that on the south is set at a higher level, reached by two steps.

The corridor mosaics are largely
composed of rich geometric carpets of squares, each containing intricate and varied patterns executed in a four-colour scheme – dark red, deep yellow, black, and white (Fig 5). The wider west and east corridors have an additional strip of figured mosaic on the garden side depicting charming and humorous scenes of pygmies armed with silver vessels as shields and helmets; they are fighting cranes. One detail shows a pygmy with pairs of sticks running away from a crocodile (Fig 3), another depicts a fallen fighter attacked by a crane, while a third shows a pygmy extracting a colleague from the jaws of a crocodile. All is set in a Nilotic landscape of exotic flowers and other plants, with lively ducks contributing to the action.

The villa’s west wing was reached from the peristyle corridor via a small tetrastyle (four-columned) light-well, with covered walkways around. The walls here are preserved high enough to bear substantial remains of the original fresco decoration: the main frieze shows professional hunters, venatores, doing battle with animals in the amphitheatre (Fig 4). The largest of the rooms opening off this mini-court (8) has a geometric mosaic featuring figures of Amor and Psyche, theatre masks, and Oceanus heads alternating in small squares in the framework, with birds and flowers occupying smaller lozenges between (Fig 7). Of greater interest are four tiny enclosures in the corners, very plausibly interpreted as once containing cupboards intended for book-scrolls. The probable identification of this room, therefore, as the owner’s library is of great interest. While we know from writers such as Cicero and Pliny the Younger that possession of a library was one of the hallmarks of any country estate of taste and distinction, they have rarely been identified in excavated villas anywhere in the Roman Empire.

The other rooms around the tetrastyle court all have mosaic floors, some of them with figured panels. Room 5 has a scene showing Lycurgus being throttled by the vine (Fig 6); room 3 contains a scene of the four Seasons with Aion, personification of eternal time, and the circle of the zodiac; with Venus and Helios also in attendance (Fig 8); and room 2 displays a detailed depiction of a chariot race in progress in a circus, with details suggesting that the design is based ultimately on the Circus Maximus in Rome rather than the local one at Lepcis Magna (Fig 11). If, however, as seems likely, the mosaic reflects an interest in chariot racing at the latter, and there was no timber predecessor of the visible stone circus there, the mosaic is surely not earlier than AD 161/2 when the circus at Lepcis was built.

The central room (12) of the south wing is a spacious chamber, a summer sitting-room looking out through two grey marble columns towards the peristyle and the sea in one direction, and through windows towards what was probably a large walled garden on the
other. This latter space, however, has not been excavated. The floor of room 12 features an arrangement of large slabs of grey grecque scrito marble from Cap de Garde in Algeria, divided by strips of rosso antico from Greece; this is framed by a geometric mosaic surround in a simple red, yellow, and white checkerboard pattern.

Of the rooms flanking it, that in 10 features a panel with a nereid and a marine centaur, while a cupid flutters in attendance; the minute size of the tesserae here contrasts markedly with that of the coarser geometric border (Fig 9). Of particular interest is room 14, in which the arrangement of the mosaic design suggests that it might have been intended as a bedroom. The striking figured panel here (Fig 10) shows a condemned prisoner in tunic and trousers being pushed towards a gigantic bull which is about to gore him to death. A ringmaster with a stick is in attendance, and the other two figures are probably meant to represent dead bodies (in ill-judged perspective), previous victims of the bull, rather than as somersaulting over the animal as it tosses them in the air, as has usually been claimed. Intriguing also is the faint inscription above, ‘Filostarapis comp[...].’ The verb has been understood as comparavit, ‘prepared’, ‘arranged’, in which case Philoscrapis might have been the presenter of the games in the amphitheatre where the action took place (presumably at Lepcis Magna), and in all likelihood also the owner of the villa; but more likely Philoscrapis (‘Serapis-lover’) is the mosaist, and the letters comp stand for compositus, ‘composed’.

To the east lay a second, more loosely-arranged court, with rooms set around two sides of another garden. The flower-beds are separated by low walls bearing mosaic decoration of animals and birds within a running acanthus tendril, a distinctive and highly unusual feature. Of the rooms facing this garden, no. 15 was clearly the principal triclinium, for it featured a large panel of cut marble pieces (opus sectile) with a simple geometric mosaic border around it in a T-shaped arrangement, on which couches were placed. When the villa was abandoned the marble was robbed, leaving only impressions today in the bedding mortar.

A similar fate befell the figured mosaic panel at the centre of room 11, which was clearly also prised out in antiquity for resale (although rather inexpertly: a foot was left behind). By contrast the vestibule to 17 still has its marble intact, made up mainly of pieces of giallo antico from Chemtou in Tunisia and africano from the Troad in north-west Turkey. The walls of the tiny room beyond (a bedroom?), still preserved to roof-height, bear frescoes
Fig 8 (left). Mosaic in room 3 depicting the Four Seasons with Aion, Eternal Time, and the circle of the zodiac, with Venus and Helius in attendance.

Fig 9 (above right). Mosaic panel in room 10 showing a sea-centaur with crustacean crushing claws on his head and a Nereid playfully taking a drinking horn from him. At top left is a now-damaged cupid holding a torch (?) flies aloft, encouraging the match. The minute tesserae used in the panel are in striking contrast to those in the geometric mosaic surround, but the figured composition lacks the terracotta or marble tray in which true prefabricated emblemata mosaics are set. The sea is shown by pale blue straight lines; the zig-zag convention for the sea in Tunisian mosaics does not extend to Tripolitanian floors.

of putti and delicate tendril designs in red, green, and yellow on a white ground (Fig 13).

The other notable room in this eastern part of the villa is room 21, a salon (oecus) for relaxation looking out towards the sea through a wide doorway. The walls, also preserved to roof-height, have marble paneling in grec scritte on their lower half, and plain plaster above (Fig 14). The latter was originally inset with a number of removable panels (the settings and the corner nail-holes remain), presumably wooden pinakes containing figured frescoes which were taken away for re-use elsewhere when the villa was given up (an alternative possibility, that the room was never finished, seems unlikely). The niche which forms the room's focal point was presumably the setting for a statue.

The final part of the villa is the bath-house, reached through vestibules 28 and 29; the later has a faded fresco of a pair of Victories above the door into 22. Remarkably, and most unusually, the suite of chambers is inscribed within a circular plan, resulting in four odd quadrant-shaped rooms, an architectural challenge in roofing there are early examples here of squinches, once thought to be Byzantine invention, but recognised over 50 years ago as already present in the Hunting Baths at nearby Lepcis Magna, probably c. AD 200.

The central octagonal hall (43), the frigidarium with two immersion pools opening off it (40 and 42), has a mosaic floor featuring Oceanus at the centre, fine Corinthian pilaster capitals of stucco flanking the northern pool, and a niche with a wall mosaic featuring a pair of boxers (Fig 12). Tiny heated rooms lie beyond an intermediate passage-room (35) with another bath pool.

Fig 10 (middle left). Mosaic panel in room 14 showing a large bull about to gore a condemned man in the amphitheatre; he is being pushed forward by an attendant. The inscription above reads Filaserojios composed of it'.

Fig 11 (below left). Part of the mosaic in room 2 showing a circus scene. The starting gates (carceres) are visible in the foreground separated by statues of herms, and four quadrigae (four-horse chariots) are sprinting at the start of the race. Three metae (turning-markers) at one end of the carcerus (central barrier) are visible at the top of the photograph.
opening off it (34). First come tepidaria with pools at 44–6. The bath had then to retrace steps through 35 and pass through 37 to the caldarium (38), with an accompanying hot-water bath (39). The latter has a semicircular opening above the furnace in which a metal boiler (testudo, ‘tortoise’) was tightly fitted, to provide extra hot water on tap.

The Silin villa did not stand alone: at least four other luxury villas are known or suspected from surface indications along this stretch of the Mediterranean. The only comparable fully-excavated examples in this part of Africa, however, are the Villa of the Nereids at Taghaza, 70km west of Silin, excavated in the 1960s but currently inaccessible inside a military zone, and that at Dar Buc Ammara (Zilten), 30km east of Lepcis. The latter was dug at the time of the First World War and immediately after, and is still visible, although somewhat degraded. Its superb figured mosaics, now among the principal glories of the Tripoli museum, are believed to date mostly to the end of the first or the first half of the 2nd century AD. The chronology of the Silin villa must await full publication of the finds, but early indications are that it is a little later, around the middle or in the second half of the 2nd century AD. Certainly there are some similarities with Zilten – the latter site also has baths based on a circular plan, and a pavement with squares of different geometric designs, as in the peristyle corridors at Silin. But the figured mosaics at the latter, while still displaying fine craftsmanship, are not of the same superlative standard as most of those from Zilten. The profusion of vaults and domes at the Silin baths, with its variety of room-shapes providing a constant element of surprise, recalls similar features in the Hunting Baths at Lepcis Magna, but preceding the latter by perhaps 30 or 40 years.

When the owner of Silin also farmed from the same property (outbuildings 30–33 are unexcavated), or had made his wealth from agricultural properties elsewhere, is unknown. He may well have been a decurio (town-councillor) at Lepcis Magna, no doubt with a domus there, and with Silin serving as his delightful villa maritima. Perhaps he was responsible for presenting at Lepcis both the circus games and the amphitheatre spectacles, which were recorded in permanent form in the frescoes and mosaics of his country villa. The rooms are not large, nor is the overall size of the building – it measures only 80 x 40m - but the style of the villa’s preservation, with its 2nd-century frescoed and floor decoration largely intact, is exceptional. The Silin villa provides us with a rare and vivid glimpse of the tastes of a member of the wealthy Roman-African elite, at his seaside retreat on the shores of the Mediterranean.

R.J.A. Wilson is Professor of the Archaeology of the Roman Empire at the University of British Columbia where he is also Head of the Department of Classical, Near Eastern, and Religious Studies.
Bronze statuette of a 'laughing' stag.
Iran, 7th/6th century BC. Length: 7.0cm.

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NUMISMATIC CALENDAR

AUCTIONS & FAIRS FEATURING ANCIENT COINS

3 July. MORTON & EDEN. Ancient coins and historical Nelson medallions. London. Tel. (44) 20 7923 5344; e-mail: info@mortonandeden.com.

8 July. BALDWIN’S. Islamic coin auction. London. Tel. (44) 20 7930 6879; e-mail: coins@baldwin.sh; www.baldwin.sh.

30 July - 3 August. AMERICAN NUMISMATIC ASSOCIATION (ANA) World’s Fair of Money. Baltimore Convention Center, Baltimore, Maryland. Tel. 410-649-7000; e-mail: ana@money.org; www.money.org.

15 August. CLASSICAL NUMISMATIC GROUP (CNG). Auction sale of ancient coins. Tel. (44) 0207 493 1888; e-mail: cng@cncoins.com; www.cncoins.com.

27-28 August. BALDWIN’S. HONG KONG COIN AUCTION. Sale of Far Eastern coins, and medals, including the Norman Jacobs Collection of Chinese coins. Holiday Inn, Golden Mile, Kowloon, Hong Kong. Tel. (44) 20 7930 6879; e-mail: coins@baldwin.sh; www.baldwin.sh.

1-3 September. WESTFÄLISCHE AUKTIONSGESELLSCHAFT (WAG). Auction sale of ancient coins. Dortmund. Tel. (49) 231 2042; e-mail: info@wag-auktionen.de; www.muenzauktion.de.


15-17 September. WESTFÄLISCHE AUKTIONSGESELLSCHAFT (WAG). Auction sale of ancient coins. Dortmund. Tel. (49) 231 2042; e-mail: info@wag-auktionen.de; www.muenzauktion.de.

16 September. WESTPHALIAN COIN AND COLLECTORS’ FAIR. General fair including ancient coins and medallions. Dortmund. Tel. (49) 231 2042 521; e-mail: messen@westfalen-hallen.de; www.westfalen-hallen.de.

20 September. PONTERIO & ASSOCIATES. General auction sale of ancient coins. Long Beach. Tel. (619) 299-0400; 800 854-2888; e-mail: coin@ponterio.com; www.ponterio.com.

23-24 September. BALDWIN’S. Coinex Fair Week. Sale of ancient and commemorative medals. London. Tel. (44) 20 7930 6879; e-mail: coins@baldwin.sh; www.baldwin.sh.

24-25 September. DIX NOONAN WEBB OFFICIAL CONNEX AUCTION. Important ancient coins including Irish coins from a private collection. The Washington Hotel, Curzon Street, Mayfair, London. Tel. (44) 20 7016 1700; e-mail: coins@dnw.co.uk; www.dnw.co.uk.

24-27 September. GERHARD HIRSCH NACHFOLGER. General auction sale of ancient coins. Munich. Tel. +49 (0)89 - 29 21 50; e-mail: coin@hirsch.de; www.coinhirsch.de.

30 September - 2 October. MEISTER & SON. NTAG (AMS). General auction including ancient coins. Stuttgart. Tel. (49) 711 2484 7369; e-mail: info@ams-stuttgart.de; www.ams-stuttgart.de.

EXHIBITIONS

UNITED KINGDOM

Cambridge
EARLY ANGLO-SAXON ART IN THE ROUND. The recently purchased De Wit collection of 7th-8th-century gold shillings and silver pennies showing designs drawn from Classical and Germanic sources. FITZWILLIAM MUSEUM (44) 1223 332 900 (www.fitzmuseum.cam.ac.uk). 23 May - 7 September.

UNITED STATES

South Hadley
HEADS AND TALES: PORTRAITS AND PROPAGANDA ON CLASSICAL COINS. The exhibition focuses on the recent acquisition of more than 900 Greek and Roman coins donated by Mark Salton and Professor Nathan Whitman. MOUNT HOLYOKE ART MUSEUM (1) 413 538-2245 (www.mtholyoke.edu). Ongoing.

CHINA

Beijing
ANCIENT COIN EXHIBITION HALL. This fascinating exhibition demonstrates the diverse forms of ancient Chinese money, including conventional round coinage, small shells, bulky shovellike currency, iron knives, and gold bars. With a collection of nearly 1000 items of currency, this display traces the evolution of Chinese coinage while unveiling the aesthetic values of the Chinese people, and the development of the social, economic, and cultural conditions in China. DENGHENG MEN ARROW TOWER (86) 10 6201-8073. Permanent.

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As the 21st century began, one of the major stories in archaeology was the race against time to rescue an impressive number of spectacular figured mosaics and vibrant patterned floors from the site of Zeugma in southeastern Turkey. The area was about to be flooded during the construction of the Birecik dam on the Euphrates river (see Minerva, September/October 2001, pp. 25-30). All too often, a newsworthy story such as this could have ended in disappointment: many mosaics found in other parts of the Roman Empire languish unconserved and crumbling in museum stores, stacked inaccessible, and forgotten by all but a handful of specialists.

It is therefore especially rewarding to report that the Zeugma mosaics have escaped such a fate. They are now housed in a modern museum in Gaziantep (Fig 1), accessible to all in a spacious, atmospherically lit display that delights as well as informs. In only a few years, the collection has been conserved using modern techniques and displayed either on the floor or on lightweight supports against the walls, without being directly fixed to them. A balcony at first-floor level allows the visitor to look down on to some of the most spectacular mosaics, while low-level platforms have been erected to make it easier to see others that can only be viewed at ground level.

Gaziantep, the nearest city to Zeugma, is the sixth largest in Turkey, with an historic old town crowned by an ancient citadel and crammed with inns, mosques, coffee houses, and bazaars. It has responded to its new fame by styling itself as a ‘City of Mosaics’. A cultural centre has been converted into a modern museum to receive the Zeugma discoveries, and the Gaziantep Mosaic Training Centre has been established to enable students to be trained in the ancient tradition of mosaic production. The Roman mosaics are used as teaching aids and provide inspiration for the decoration of small practical items, such as mugs, storage boxes, and mirror frames. Replicas adorn public spaces, while the originals now constitute one of the largest and most interesting collections in the world, rivalling the Hatay Museum with its array of mosaics excavated at Antioch.

The new Gaziantep Museum has 3500m-square of exhibition space, with 550m-square of mosaics on display, mostly dating to the 2nd or early 3rd centuries AD. But that is not all! Some 120m-square of frescoes can also be seen, along with original columns, sculptures, and small finds. Among the latter is a selection from over 100,000 seal stamps found at Zeugma. This collection is currently being conserved and recorded. Its exceptional size, and the wealth of images depicted in the impressions made by the seals, makes this an outstandingly important research project.

Visitors to the museum are introduced to Zeugma by a model of some of the excavated houses that are now underwater, showing pictures of the mosaics and frescoes in their original positions. It is striking that so many elaborate figured mosaics came from such a small area, amply justifying the Turkish and international rescue efforts. Facing the visitor on entry is the Theonoe mosaic, a reminder that the site is far from exhausted: this rare mythological scene was among those found in 2002, when the water level was briefly lowered by the dam company (see Minerva, January/February 2003, pp. 6-7). Displayed on the floor is a mosaic of Poseidon, Zeus, and Athena, all figures of the gods, depicted in their attributes, from the House of the Dioskouroi at Zeugma. The mosaic is attributed to the 3rd century AD. It is a fine example of the high-quality mosaics produced in Zeugma.

**Dr Patricia Witts** is a specialist in Roman figurative mosaics and author of Mosaics in Roman Britain: Stories in Stone (Tempress, 2005).
in front of this mosaic is the scene of two figures seated adjacent to a large calyx krater (Fig 2). They have been described as Eros and Psyche, but the female does not have Psyche’s distinctive wings. The exact significance of the scene and the identity of the female figure is still being debated by experts. Blue-glass tesserae feature extensively in Eros’ drapery. This material has also been used to highlight the edges of his companion’s diaphanous garment and the beads of the male masks in the exquisite canthus scroll border decorated with fruits and flowers.

Beyond the entrance foyer in the main exhibition space, an iconic, almost life-sized bronze statue of Mars acts as a focal point (Figs 3, 6). Found in the House of Poseidon, the god of war is shown wearing a helmet and with an appropriately ferocious expression on his face. During cleaning, it was discovered that his expression was accentuated by the use of silver for the whites of his eyes, with a circle of gold inlay in the pupils. In his left hand he holds an unusual arrangement of tendrils and buds, perhaps to symbolise fertility and abundance, while his right hand has been provided with a replica spear.

The statue of Mars faces a reconstruction of part of the House of Poseidon, with the original columns of the peristyle surrounding a mosaic depicting Poseidon, the god of the sea, riding in a chariot, with busts of Oceanus and Tethys emerging from the water (Fig 3). The whole mosaic paved a shallow pool filled by a fountain. This peristyle adjoined a room decorated with a mosaic of Perseus and Andromeda. The reconstruction in the museum includes the remains of wall paintings as well as the mosaic. The superbly preserved mosaic of Achilles on the island of Skyros, with the hero throwing off his disguise as a woman (see Minerva September/October 2001, p. 30 and front cover), came from another pool in the same house. It is displayed nearby, along with its fountain and the remains of columns and wall paintings.

Other mosaics are displayed around the walls. Notable among them are the sadly-denuded remains of the sumptuous mosaic depicting the wedding of Dionysus and Ariadne. This mosaic was found in 1992 in one of the first excavations conducted by Gaziantep Museum, following the discovery of a smuggler’s trench. Sadly, and despite security precautions, some two-thirds of this mosaic were stolen in 1998 and have yet to be traced (see Minerva May/June 1999, p. 5). Four of the original ten figures remain, including Silenus and a young man with flutes. A large question mark indicates the area illicitly removed, with information about the theft and a photograph of the mosaic as originally found.

Fig 3. The main exhibition hall of the Gaziantep Museum with a statue of Mars and the columns of the peristyle from the House of Poseidon at Zeygma, in which the Poseidon mosaic is laid. The room with the Perseus and Andromeda mosaic is to the right. On the wall to the rear are the remains of the sumptuous mosaic depicting the wedding of Dionysus and Ariadne; the large gap with the question mark indicates the area stolen in 1998.

Fig 4 (above). Mosaic fragment from the House of the Maenad, at Zeygma, depicting the head of a maenad, termed 'gypsy girl' with hair bound in a scarf, late 2nd century AD.

Fig 5 (below). Aphrodite mosaic from the House of Poseidon at Zeygma with an inscription referring to Zosimos of Sameostia, displayed with a marble statue of the goddess and wall paintings of famous women from Greek mythology, late 2nd to early 3rd century AD.

Fig 6 (below). Detail of the bronze Mars statue from Zeygma, late 2nd or early 3rd century AD.
To the rear of the main exhibition space is another recreated room setting (Fig 5). The mosaic on the floor depicts Aphrodite, the goddess of love, seated in a scallop shell held by an old and a young sea-centaur. Small *erotes* hunt wild animals in the borders. A particularly notable feature of this mosaic is that it contains a Greek inscription recording that it was laid by Zosimos of Samosata. Decorating the walls are paintings that, although not found with this mosaic, provide an evocative reminder of an overall decorative ensemble. These wall paintings show famous women, among whom Deidameia (daughter of King Lycomedes of Skyros and lover of Achilles) and Penelope (the faithful wife of Odysseus) can be identified from inscriptions next to their heads.

A ramp leads to a lower level, where smaller exhibits are arranged chronologically. Here can be found a haunting portrait termed 'Gypsy girl' on discovery in 1998 (Fig 4) - the only piece to survive from the centre of what had evidently been a large mosaic. It shows the head of a *maenad*, a female follower of Bacchus, with her hair bound up in a scarf. Traces of a vine-leaf can be made out at the top left and the hint of a Bacchic *thyrus* was discovered on the edge of the fragment (not visible in Fig 4).

Rooms on the upper floor accommodate more mosaics, including some that are particularly large and important. In one, an expanse of colourful geometric decoration contains a rectangular panel with remains of the Muses and a square panel with named personifications of *Palaideia* (Education), *Arte* (Virtue), and *Sophia* (Wisdom; Fig 7). In another, a scene with Pasiphae and Daedalus is shown back to back with a Triumph of Dionysus. The layout of these two floors, with the figured panels arranged in a T-shape inside a broad U-shaped area with geometric motifs, reflects the traditional layout used for mosaics in dining rooms: the couches were placed on the U-shaped area, allowing the figured scenes to be enjoyed by diners.

In this article it is only possible to give a flavour of the exhibits, which include many other figured mosaics as well as colourful geometric floors and interesting small finds. It is particularly useful that for each exhibited mosaic there is an informative panel in Turkish and English containing a plan showing the location of the mosaic within its building. Also included in each case is an *in situ* photograph, a detailed description of the imagery (with an explanation of any myth depicted) and geometric motifs, and the dates of the mosaic, and when it was found.

An excellent modern tourist infrastructure has developed in Gaziantep to encourage visitors to see Zeugma's riches for themselves, with the site itself lying within easy reach (Fig 8). The series of Roman houses were located on the slopes of Belkis Hill above the River Euphrates and have drawn comparisons with the terraced houses at Ephesus. Two-thirds of the city remains above water, although the twin town on the opposite (eastern) bank is now totally submerged. Turning a necessity into a virtue, a building at the Birecik dam has been provided with a visitor centre displaying large photographs of the mosaics.

This part of Turkey has already become a major destination for specialists, and Gaziantep was the venue in 2007 for the Fourth International Mosaic Symposium of Turkey, organised by the Turkish branch of AIEIMA (L'Association internationale pour l'étude de la mosaique antique) under the direction of its President, Professor Dr Mustafa Soydan of Uludag University’s Mosaic Research Centre in association with the Gaziantep Chamber of Commerce, Gaziantep University and the Gaziantep Mosaic Training Centre. Reflecting the name of Zeugma ('bridge' or 'yoke'), the theme of the symposium was a mosaic bridge from the past to the future. It attracted participants from 12 countries, including practising mosaic artists, as well as archaeologists, conservators, museum staff, and specialists in iconography. International interest in Zeugma continues apace: it is heartening that it did not end when the floodwaters rose, and that the mosaics are now available for all to enjoy.

The author gratefully acknowledges the assistance of Dr Mehmet Onal of Gaziantep Museum and Filiz Hostioglu in the preparation of this article, and of Sanko Holding AS for permission to reproduce photographs from its archive. For further information, see www.gaziantepmuzesi.gov.tr.
THE WARRIORS OF ALLAH

Claudine Dauphin previews an intriguing exhibition dedicated to Medieval and Post-Medieval Islamic weaponry at Musée des Arts Asiatiques, Nice.

So you did not slay them, but it was Allah who slew them, and you did not smile when you smote (the enemy), but it was Allah who smote, and that He might confer upon the believers a good gift from Himself; surely Allah is Hearing, Knowing (Quran, Sura 8: 17, Al-Anfar, The Spoils of War).

Slaying and smiting: with what arms did also the warriors of Allah - described simplistically by the Church Father St Maximus the Confessor in 634 as ‘ferocious and wild beasts’ - take the terror in the Byzantines as they rampaged, destroying cities, devastating fields, torching villages and monasteries?

At the time of the Moslem Conquest, the Arabs used the Bedouin sword (sā'īd) armed with a straight blade and a single or double cutting edge, manufactured in Yemen but also by Jewish craftsmen in the hinterland of Medina, and worn suspended from a cross belt. Like the Prophet Muhammad, they held lances (jābeel) and were protected by helmets, most of which were of steel, although some consisted of scraps of iron, wood, and hardened leather, held together by a solid, plaster-based paste. The quartering of troops in military bases (amsār), the granting of fiets (gatī'a) by the established Umayyad dynasty, and the administrative division of the conquered lands into military districts (jūnūd) on the model of Byzantine Themes, led to the transformation of the warriors of Allah into knights. Tracing the stages of this development through arms and armour has been the aim of the Furūsyya Art Foundation entirely devoted to furūsyya (from the Arabic farās, horse), a term covering riding and its equipment, and hippodrome, but extending also to hunting and warfare, and even to sports, such as polo. The first manuals describing such activities were produced at the Abbasid court of Baghdad (750-1258), the heyday of furūsyya literature being under the Mamluks (1250-1517). Based in Vaduz, Lichtenstein, the very private Furūsyya Art Foundation originally limited its acquisitions to pre-16th century pieces. The widening of its policy to encompass ten centuries (8th-18th centuries AD) and a territory stretching from Arab Andalus Spain to the Indian Deccan is reflected in the exhibition Furūsyya, Treasures of the Knights in the lands of Islam. The Furūsyya Art Foundation Collection at the Musée des Arts Asiatiques in Nice. This follows a successful run in 2007 at the Institut du Monde Arab in Paris. Unobtrusively, the visitor is led from Attack to Defence, and finally through Hunting, to Regalia and Parades.

Attack

Within each theme, the exhibition pieces are organised by category and typologically. Unfortunately it lacks visual aids apart from four small manuscript illuminations from the Persian Book of Kings (Shah-ñāmeh) written c. 1000 by Firdawsi and from Anfi’s Sulaymanīnāma (1558) which describes the life of Sultan Suleyman the Magnificent. The Nice exhibition is also devoid of any didactic dimension, thus missing a golden opportunity to educate visitors in Islamic warfare as a spiritual holy war - Allah granting Victory to Good over Evil (Sura 8: 10; ‘Victory comes only from Allah’) - rather than as a ferocious jihad against those who have not submitted (Islam) to His will. Moreover, visitors are left to their own imaginative devices in order to recreate mentally from arms disseminated across three rooms and a corridor, the mythical ‘dummies’ of Islamic knights at successive historical periods.

From Swords to Sabres

With straight, long blades, straight handles and guards with decorated ends, steel swords could easily pierce enemy armours. The blade of a rare Hispano-Moorish sword bears a poetic verse on one side, and on the other the list of titles held by Sultan Muhammad V who defeated the Christians at the Battle of Algeciras in 1369 (Fig 1). Worn attached by leather strips to

Fig 1 (below left). Steel sword blade from Nasrid Granada (Spain); guard inscribed with the name Muhammad ibn Yusuf. Dated 1235-1247. L. of blade 84.5cm, L. of guard 23cm.

Fig 2 (below right). Steel, gold, and ivory sabre (yatagan) with concave cutting edge, and its scabbard. Manufactured in the workshops of the court of Sultan Bayazid II or Selim I, Ottoman period, c. 1500-1515. Total L. 81.2cm, L. of blade 67.8cm.

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belts enhanced by metal studs in the shape of crouching lions, sabres with short blades were introduced from Central Asia into Islamic Persia in the 9th century. Their curved shape enabled horsemen to hit quickly (Fig 3). A unique sabre with a concave cutting edge (yatagan) and its scabbard were manufactured in the Istanbul workshops of Sultan Bayazid II or Selim I c. 1500-1515 for Ahmad ibn Hersek Khan (1456-1517), dubbed in the inscription engraved on the blade: ‘the Alexander of generals’ (Fig 2). Husband to one of Bayazid II’s daughters, vizir and administrator of the fleet, he ended his career as Great Vizir of Selim I, whom he assisted in his victorious campaign against the Mamluks in 1517. Against a delicate interlace of gold lotuses on a black niello ground, a dragon and a phoenix (with encrusted rubies as eyes) face each other in combat. This is a Chinese motif borrowed in the 14th century by Iranian craftsmen who transmitted it to Ottoman Turkey in the mid-16th century.

Defence

Even if Allah’s Knights fought in His cause, willing to slay and get slain ‘in exchange for the garden of Paradise’ (Quran, Sura 9: 111, Bara’ah, Ultimatum), life was held as dear, for which maximum protection had to be ensured.

Talismanic Shirts, Mailcoats, and Armour

Cotton talismanic shirts entirely covered with prophylactic Arabic inscriptions, Quranic prayers, and magical numbers and squares, were worn under armours or mailcoats of rivetted iron or steel rings, sometimes of copper and brass. A small 9th century lead figure wearing a talismanic shirt inscribed in Kufic script, and a 15th century actual shirt from the Sultanate of Delhi in India, illustrate this practice which was tolerated rather than encouraged by Islam. Often worn over mailcoats until the 15th century, scaled armour consisted of metal, leather, and horn plaques held together by strips on a textile lining. In the 15th century, mailled coats and scaled armour were combined into armour of mail and plaques inscribed in gold with Quranic verses, mystic poetry, and talismanic wishes aiming at symbolically protecting Allah’s Knights from their enemies (Fig 8).

Fig 6. Steel and gold mail from India. Mughal period, 18th century. L. 73cm.
Helms

Hemispherical helmets of single sheets of steel decorated with gold interlace and Arabic inscriptions, such as a late 13th century Syrian or Egyptian Mamluk period example on display, were replaced in the 14th century. Their successors were more resistant, bulbous turban-helmets with twisted flutings, which reached down the forehead, two semi-circles having been cut out to accommodate the eyes. A metal strip covered the nose; a piece of mail which protected the neck and shoulders was hooked to a series of small holes drilled on its rear edge. On the summit of the helmet, the colour of the pennis or the number of plumes of the aigrette attached to a small, pierced button, indicated the rank, the bravery, or simply the combat unit of the warrior. Many helmets exhibited in Nice bear the stamp of the arsenal of St Irene, which had been established in the Byzantine basilica of St Irene incorporated in the first court of Topkapı Sarayı, the Ottoman Sultan’s Palace in Istanbul. Introduced in the 6th century, the conical helmet was also widely worn in the Islamic world (Fig 9). Endowed with an aigrette-horn, it protected the top of the head and the cheek, and a visor, a beautiful Ottoman Turkish conical helmet in the exhibition dating to the second half of the 16th century, is inscribed in gold with the famous socalled ‘Throne verse’ (255) of Sura 2, al-Baqara (The Heifer).

War Masks

Heirs to Hellenistic prototypes with cheek-covers (4th-3rd centuries BC) and their Roman and Byzantine variants, war masks attached to helmets by hinges in their upper parts concealed the faces of horsemen, from the Arab Conquest until at least the 15th century. The unusual brass and silver 16th century mask from Iran or Tatar Crimea is awe-inspiring: the wearer’s mouth was shielded by a series of flutings alternately decorated by a motif of Chinese clouds and flared centrally by four holes for breathing. Above the nose, a cartouche in the centre of the forehead is inscribed in Arabic with the Moslem psalm of faith (shahada): ‘There is only one God, that is Allah, and Muhammad is His Prophet’. Eyebrows with alternating fluting and floral motifs and hexagonal openings for the eyes lend Classical gravitas to this remarkable mask.

Shields

According to tradition, the Prophet Muhammad owned a shield called al-Fidul, but the oldest preserved shields date only to the 14th and 15th centuries. Predominantly circular, but also scutum-shaped in imitation of Western models, or combining two ovals in Moslem Spain, shields were first of wood. Subsequently, reeds bent to form circles were tied together concentrically by coloured cotton, woollen or silken threads around a circular, central, metal umbo. Whereas steel shields were manufactured in India, Iran, and the Arab world, lacquered shields were particular to India.

Maces, Hammers, Battle-Axes and Javelins

Maces were of two types: long, heavy and entirely of metal, as an 11th-13th century bronze Seljuk mace from Anatolia topped by a dragon’s head; or lighter and with a rounded head on a wooden or metal staff, similar to the maces with stone heads which had been the hallmark of rulers and heroes since Sumer. From the 17th century, maces became lighter (Fig 6) with spherical or ovoid heads frequently in the shape of rams, bulls, oxen, lions or dragons.

Hammers were used by infantrymen to undermine the enemy’s fortifications. Squat bronze hammers from Khorasan dated to the 11th-13th centuries combined a wide head for hitting hard and, at the back, a smaller head in the shape of an elephant’s trunk.

Hanging from saddles, battle-axes were lethal in close combat, especially those with a large, crescent-shaped blade often covered in Arabic inscriptions. Infantrymen used smaller axes, with a straight blade or one slightly curved at the bottom which derived from 11th-13th century Russian axes. More precise than lances of which only very few have survived, javelins and small, short darts could hit their targets exactly.

Daggers

The Furūšyan Art Collection offers an astonishing range of daggers (khanjar) considered as defensive weapons in close combat. Cross-shaped pommels, popular in India from the 18th century onwards, and often incrustated with precious stones (jade, rubies, and emeralds) and gold, allowed for a stronger grip. A particularly dangerous dagger (katar) was adopted by the Indian Moghuls c. 1700 (Fig 5). When the warrior had lost his sword or his mace and fought his enemy on foot, face to face, he resorted to the katar, with two transverse bars above a very wide blade. Holding the katar with his fingers under the bars, he could grip his dagger firmly. After piercing his enemy’s armour, he would drive the katar into his adversary’s flesh and twisted it so as to open the wound. More common was the kard (‘knife’ in Pārsī), with a straight
Islamic Weaponry

blade and setting. From the second half of the 18th century, Indian craftsmen competed with each other in producing distinctive zoomorphic (heads of horses, rams, antelopes, and lions) and floral handles in jade, ivory, and metal.

**Horse Armour and Harnesses**

In the 9th-10th century Eurasian steppes, horses were protected from projectiles in battle by padded bands. In the Caucasian Khazar Khaganate, skull-caps saved horses from a fatal blow on the upper part of the skull and padded cloths covered their noses and cheeks. Mailcoats for horses were developed along with those for men, but very few carapacecs of mail, and subsequently of mail and metal plaques, have survived, as opposed to metal blazes for foreheads. Consisting originally of rectangular plaques in hardened leather, Steel blazes from the 14th century onwards progressively enveloped horse’s head (Fig. 10). In the 16th and 17th centuries, blazes of steel, leather, and gilded silver with floral motifs were also manufactured for elephants which engaged in battles in India.

**Archery**

The Arabs who used archery solely when fighting on foot, progressively adopted the art of archery on horseback from the Turkic-Mongolian nomadic horsemen of Central Asia. This also played an important part in the sovereign’s hunts and competitive games. Archery is well illustrated in the Nice exhibition by three types of bows (the large but light Arab bow, Persian, and Turkish); three types of arrows (short, long or wide) with feathers of eagles or other birds of prey; an iron set of arrows ‘archers’ rings in leather, bone, horn, metal, and jade, often decorated with inlaid precious stones, gold or coloured enamels; and leather quivers, notably a superb Ottoman example retrieved during the Turkish siege of Vienna in 1683, covered by blue velvet embroidered in silver threads with large, open carnations.

**Regalia and Processions**

**Furusiyya** was twinned with the concept of *fahumma* (from the Arabic *fata*, ‘young man’), ‘spiritual chivalry’ as embodied by Ali, the Prophet Muhammad’s cousin and son-in-law. Tradition relates that the Prophet had exclaimed: ‘There is no other sword than Dhu ‘I-faqr and no other knight than Ali’. Like Excalibur, King Arthur’s sword, Dhu ‘I-faqr (appropriately given to this Prophet by the Archangel Gabriel, but in fact part of his share in the booty of the Battle of Badr in 624) was frequently depicted on banners and in popular imagery. Inherited by Ali, it was passed to the Caliph at his induction together with the Prophet’s Legacy (*mahrūkh*), his ring and coat, Moses’ stick, and Adam’s shirt. These relics disappeared in the sack of Abbasid Baghdad by the Mongols in 1258. Resurrecting the Caliphate, the Mamluks forged new insignia of power: a black coat and turban, and a sword. After the conquest of the Mamluk Empire in 1517, the Ottomans appropriated the caliphate and its (by then) mythical insignia. Several Dhu ‘I-faqr swords are kept at Topkapi Sarayi, some in the Armoury, others, supposedly belonging to the Prophet and to Caliph ‘Uthman, in the Room of the Relics.

Several pieces highlight the transformation of arms into jewels contributing to the ostentatious adornment of a masculine elite. A stupendous, gilded silver ramier entirely inlaid with gold, turquoise, jade, rubies and emeralds, bears the signature (*taghira*) of Sultan Murad III. An exceptionally luxurious dagger and scabbard were created c. 1600 by Mehmet ibn Imad, court jeweller of Sultans Murad III and Ahmed I. The Damascus steel blade is decorated with gold arabesques, while the jade handle is entirely set with rubies representing hearts of red flowers inserted into golden petals forming tiny cups. Rubies are inlaid in rows across the entire surface of the gold scabbard (Fig 4). The technical mastership of Moslem craftsmen is illustrated by a 18th century Moghul or Deccan steel ceremonial axe with curved blade terminated by the head of a unicorn and its single, long, straight horn, rubies being inset into the eyes (Fig 7). Such extraordinary items often served as diplomatic gifts (green jade bowls inlaid with rubies and gold, now in the Louvremarkuseum, Paris, were sent as presents by the Sultan to King Louis XIV of France).

A red velvet carpet, brocaded with gold and silver threads, from 18th century Turkey or Bukhara, and a 17th century steel, leather and gilded silver blaze for a camel, with cheek-pieces decorated with floral motifs, conjure up Ottoman images of the annual Hajj cortège with processions of camels carrying the *riswa* (the cloth covering the *ka’ba*) from Damascus to Mecca, with standards flying. This is evoked by the exhibition’s steel and copper standard from Safavid Iran dated H. (Hegira) 1097 (1685-86), which proclaims: ‘He is Allah, glory to Him/Allah, light of the heavens and of the earth./O He the Victorious! 1097.’

Fig 9. Steel cloth, brass, and gold. Helmet. India, Deccan (?), 16th century. H. 27.2cm, diam. 23.5cm.


An illustrated colour catalogue by the same name, edited by Mohamed Basir, is published by Art Foundation/Skira (2007, 434pp, hardback, 79 euros). For further information, see www.cg06.fr/w_asiatique.

Photographs: copyright Furusiyya Art Foundation.

Fig 10. Steel horse blaze from Anatolia or Iran. Turkmen period, 1388-1419? L. 45.5cm.
Stonehenge: The Biography of a Landscape
Timothy Darvill

'Sweet, huge heapes of stones' - Sir Philip Sidney's eloquent description of Stonehenge is his posthumously published sonnet, 'The Seven Wonders of England'. It epitomises the awe and mystery which the monument arouses in its onlookers today as much as in Elizabethan times, as well as the universal affection in which it is held. Stonehenge is the best-known prehistoric monument in Britain, probably also in Europe. Sadly, it is also the worst presented to the million or so people who now visit it each year. Following the publication in 1956 of Richard Atkinson's Stonehenge, the preliminary account of the important excavations carried out in association with Stuart Piggott, thought about Stonehenge and in particular the history of the different phases of its construction 'fossilised' for a number of years. More recently, however, we have seen a range of new, if small scale, excavations, research projects and publications about the monument and the area surrounding it. They have taken radically new directions or come up with stimulating and often startling new arguments and hypotheses about Stonehenge, and so it is with this book. Darvill looks at the monument not on its own and in its immediate setting within the boundaries of the World Heritage Site, but rather within its wider surrounding landscape.

Timothy Darvill is Professor of Archaeology at Bournemouth University, an experienced archaeologist with a specialised knowledge of the Neolithic period in Britain and Western Europe, and in particular of Stonehenge, with which he has been involved for over 20 years. He has written a well-researched, detailed and accurate synthesis of practically everything that is important and known about the monument and its landscape at the present day. The book will meet the needs of a wide range of users including students and academics, the interested lay-person and tourists. It is well provided with line drawings and photographs both in colour and black and white and has a good bibliography to help readers to delve further into individual aspects of the subject if they wish to do so and many, I suspect, will.

However, the subject of Stonehenge and the area around it over the past 8000 years or so is a large one. While we must certainly commend the author for the amount of up-to-date, essential and reliable information that he has included, some subjects are treated disappointingly briefly and without critical discussion and others are ignored or virtually ignored. These include the immensely popular question of the astronomy associated with Stonehenge and the eastern avenue, as well as the possible use of the monument in the Neolithic and Bronze Age periods.

Nevertheless, this is a very useful handbook. The study of Stonehenge continues to move on and we should expect to hear or read new dating evidence, as well as new thoughts and radically different hypotheses about it for many years to come. This is, perhaps, Stonehenge's inevitable fate, because of its universal appeal to both archaeologists and the general public around the world. Long may this remain so: archaeology should entertain as well as inform. Darvill's study and findings provide an essential foundation, summarising practically everything that we need to know about it up to 2006.

Dr Paul Robinson, FSA
Formerly Curator,
Wiltshire Heritage Museum

The Megalithic Monuments of Britain and Ireland
Chris Scarre

Britain and Ireland are renowned for their sheer quantity and diversity of megalithic monuments. This book is a wide-ranging account of these monuments, focussing mainly on those incorporating stone structures. It originated two years' earlier as a publication in French with the same title, and is intended for students and a general readership.

The book is divided into six chapters. The initial chapter sets the study of megalithic monuments in context, with short sections outlining the megalithic and neolithic periods in Britain, the nature and diversity of megalithic monuments, and some of the theories that have been put forward to explain their function. This is followed by four substantial chapters which describe the monuments on a regional basis: those in Scotland, England and Wales, Avebury and Stonehenge, and Ireland. Each chapter explores the different types of monuments in these regions, and how these change through time. The chapters on both Scotland and Ireland are particularly comprehensive, describing each of the main classes of monument and the key regions where megalithic monuments predominate. The chapter on England and Wales attempts to cover a larger geographic area and diversity of monuments in a similar number of pages. Whilst it provides a good account of the major monument groupings, there are certain types of monument that do not receive a mention, for example the Scillorlan chamber tombs in Cornwall and the Scilly Isles, and the Peak District barrows which cover single inhumation burials with elaborate grave goods. Their inclusion would have helped reinforce the regional characteristics of neolithic Britain, although the succeeding chapter on Avebury and Stonehenge does make this point through outlining the development of these unique landscapes.

The final chapter looks at the neolithic monuments in Britain and Ireland in their European setting. It shows that these are part of a more extensive family of monuments dis-
vate persons there are sometimes statues of them. It is through the sculptures, reliefs and paintings representing them that we see their deeds and daily life. Every year as even more books on so many aspects of ancient Egypt are published they all concentrate so much on these tangible aspects that we lose sight of the people themselves. These two new books, coincidentally closely published, set out to redress that imbalance, and both do it most successfully. Admittedly there have been several biographical dictionaries of ancient Egyptians published, but they have been restricted by their format and style. So, where do these two similarly orientated books differ or add to Egyptianological literature? Both look at the lives of their chosen subjects in their context and the evidence, be it sculpture, autobiographical inscriptions on tomb walls, dedicated statuary, or the mummies themselves.

Both books choose their subjects ranging from the Old Kingdom down to the Ptolemaic (Greek) period and Cleopatra VII, the last of the line. Obviously both authors have occasionally chosen the same person as their subject, be they royal or common, and it is interesting to observe their approach from different angles. Booth has selected 20 people, nine being royal; Wilkinson has 100 people, of whom 38 are of royal blood. Comparing the two books on a royal basis, only eight royal lives appear in both: Aahmose, Hatshepsut, Akhenaten, Tutankhamun, Horemhab, Ramesses II and III, and Cleopatra. This alone shows what a wide stage and difficult choice both authors faced in selecting from uneven records covering a span of 3000 years. From the available records and evidence the view is essentially through male eyes, although Wilkinson has been able to include 11 female lives, and Booth two. Gender records from ancient Egypt are not easy to come by, even for royalty.

The choices from non-royal people are wide indeed, and here appear many and varied characters. Some are already well known by virtue of their high office, but so many of them are remarkable vignettes of the normal (including criminal) people of ancient Egypt. We are not looking at fictional novel-like reconstructions here but the actual facts, often in their own words from papyri or records on tomb walls, of people who were very much alive, loved life (and at times despaired of it), and left a record that can be teased out of the mists of history. Here, in both books are the real Egyptians, the many and varied professions, the flesh and blood of one of the greatest civilisations at it was.

The ancient Egyptian's dearest wish, often found on funerary stele, was: 'speak my name that I may live'. Both Charlotte Booth and Toby Wilkinson have done that for them. Both books are highly recommended, they complement each other splendidly and to have to choose between them would not only be difficult but injudicious.

Peter A. Clayton, FSA

Houses for Eternity

In ancient Egypt there were only two types of buildings that were constructed to last – the temples, 'the House of the Gods', and the tomb – 'The House for Eternity'. All other buildings, palaces, official government offices, houses, and so on, were, in an Egyptian's eyes, ephemeral. Palaces might have stone bases for the wooden columns, or stone door thresholds, but the rest of the building, its walls and courtyards, was of mud brick. Tombs, in Egyptianological literature, have tended to be approached as royal manifestations, either the pyramids or those in the Valley of the Kings. Individual private tombs might be published in monograph form. Here, for the first time, Drs Dodson and Ikram survey the vast field of Egyptian tombs secular and royal, chronologically. "They are both prolific authors of books an ancient Egypt, all of which are informative, interesting, and always necessary to have at hand for answers on their topics – this new book is no exception. The book divides into four parts; the first examines mortuary beliefs, the tomb in society, its construction and decoration and its study (which also gives a resume of early Egyptology, especially where it was 'cemetery led'). This is all an essential grounding to understand what follows. Part two is devoted to the decoration of the tomb. Having clearly set out the parameters of study, part three then examines the Egyptian tomb, secular and royal, from the Early Dynastic Period down to the Late and Graeco-Roman Periods. Part four pre-

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in a new permanent gallery. This programme has revealed significant new information about painting techniques in ancient Egypt. Whilst the 11 pieces in the British Museum are internationally known, there are other less well known fragments in the museums in Berlin, Avignon, and Lyons, and these are also illustrated and studied in the book. A reconstruction scheme for the tomb-chapel is suggested, the extensive text fully describes each painting in detail, and the hieroglyphic texts on the paintings are translated and commented on. The new specially taken photographs of the wall paintings, and notably the several close-up details, are an eye-opener to these undoubted masterpieces of ancient Egyptian art. The book not only illustrates the paintings as never seen before, it puts them into context for their content and style. There is only one question now left and still to be answered, and that answer may yet be found with the current clearance of more modern houses built above the tombs of the nobles on the west bank at Luxor – where was the tomb of Nebamun and, if it is found, will there still be any remnants left of the rest of its remarkable painted decoration.

Peter A. Clayton, FSA

Chronicle of the Maya Kings and Queens:
Deciphering the Dynasties of the Ancient Maya
Simon Martin & Nikolai Grube
Thames & Hudson, 2008, revised edition

It is rare to be called upon to review a new edition that is already as successful and widely distributed as this volume. However, this is clearly a special case. When Chronicle of Maya Kings and Queens was originally published as a part of Thames and Hudson's series on kingdoms worldwide in 2000, it was immediately successful and became a standard reference work. Not only do the authors walk us through 11 major Maya cities and the dynasties of their rulers, but they do so within the context of their own groundbreaking work on Maya politics and their interaction.

Nothing is more difficult than to understand the nature of how an ancient civilization was organised, especially with the paucity of written material we have from the Maya. Yes, despite the great breakthroughs in decipherment of the past three decades, the fact remains that the Maya written record does remain small. As a consequence there have been two approaches to understanding political interaction. The first is to examine the written record and to incorporate information embedded in architecture and ritual. The second, relies more heavily upon the nuanced data that we derive from settlement surveys as well as geographical and social modelling, but of course cannot ignore the art and architecture of a society.

Martin and Grube are two of the masters of the first approach. Both have made significant contributions to decipherment and interpretation of texts related to royalty. In this tour de force, they penetrate the haze separating us from the world of Maya royalty.

This beautifully illustrated volume has a place on every bookshelf. I am struck by the multi-functional nature of the volume. For the Mayanist, it is encyclopaedic; for the non-Mayanist, it brings their ancient world to us in a breathtaking way; for the traveller, it is an indispensable guide.

However, nothing is perfect and neither is this volume. While much research has been done since this was first written a decade ago, this is the same book as the original edition. Though the authors rewrote the introductory pages of each chapter to note the new field projects that are underway, that is the extent of the
James Cuno, Director of the Art Institute of Chicago, makes an impassioned plea in this timely book for the recognition that antiquities are the heritage of all mankind and cannot be perceived as just state property. In recent years, as readers of Minerva are well aware, a number of modern nations have claimed that all antiquities found within their borders are an intrinsic part of their national culture. As such, if they have left their borders after a certain date and without proper export papers, they can be considered as ‘stolen’ and are subject to return.

Cuno goes on to champion the restoration of 'partage', the division of archaeological finds, the excavation being shared between the excavating party and the local host country. He bemoans the over-rention or hoarding of cultural property. He states that 'The world is increasingly divided: more nation-states than ever before, and more nation-states with laws that restrict the international movement in archaeological and cultural property found within their borders. The archaeological community is aligning with the nationalistic programs of many of these nations, many of which are imposing heavier restrictions on the international movement in antiquities, including unprovenanced antiquities.'

Many of the views held by both sides of this vexing situation are, to say the least, extreme. Cuno writes that the colleague who had interviewed him for the position as the museum’s Director said that she'd rather an unprovenanced antiquity be destroyed than acquired by a museum. The same colleague had removed from sale in the bookshop a copy of In Pursuit of the Absolute: Art of the Ancient World from the George Ortiz Collection, an exhibition catalogue of a world-famous collection at the Royal Academy, London, 'on moral grounds' because she said it encouraged the looting of archaeological sites...

Cuno argues that restricting imports of antiquities from specific countries, such as those listed by the US State Department’s Cultural Property Advisory Committee, will not stop nor significantly reduce the pillaging and smuggling of such items. The request by China for the blanket restriction of all items from the Palaeolithic period to the end of the Qing Dynasty (1911) is an extreme case. It is pointed out that the sales of such items at auctions inside China (excluding Hong Kong) totaled US$1.5 billion in 2005, double that in 2004, more than 25 times the amount of Christie’s and Sotheby’s Chinese sales in the US in 2005. Thus it is only 'an attempt to have the US government help enforce China's nationalist retentionist cultural property laws'.

The book is cogently argued and extremely well documented. The ‘select bibliography’ is ten pages. It explores in great depth all of the recent turmoil regarding the legal ownership of antiquities including two chapters devoted to the problems involved with the Turkish and Chinese governments. No one involved in the acquisition of antiquities can ill afford to pass this book by as it sets the stage and defines the complexities involved in this heated battle that is sure to rage on for years to come.

Jerome M. Eisenberg, Ph.D.
UNITED KINGDOM

LONDON: EMPIRE AND CONFLICT. This special exhibition will explore the life, love, and legacy of Rome's most enigmatic emperor. Featured are objects from 28 museums worldwide and finds from recent excavations shown together to reassess his legacy, which remains strikingly relevant today. BRITISH MUSEUM (44) 20 7323 8299 (www.britishmuseum.ac.uk). 24 July – 26 October (see Minerva, this issue, pp. 25-28).

TUTANKHAMUN AND THE GOLDEN AGE OF THE PHARAOHS. In 1972, the unprecedented King Tut exhibit at the British Museum fascinated millions of visitors with the majestic treasures of his tomb, setting attendance records. Now some of his treasures are back, giving a new generation the chance to learn first-hand about the life and magic of this ancient monarch. THE 02 CENTRE (44) 871 817 9901 (www.kingtut.co.uk). Until 31 August (then to the US).

BOLTON, Lancashire

BOLTON'S TREASURES. Peruvian artefacts donated to Bolton Museum in 1903 by the mill-owners include ceramics, including statues, pottery, and mummies. BOLTON MUSEUMS (44) 1204 332 377 (www.boltonmuseums.org.uk). Until 2 August.

CARDIFF

FROM CAVE TO CHurch: THE ORIGINS OF EARLY WALES. In 2007 Amgueddfa Cymru-National Museum Wales celebrated its centenary year. One of the highlights of the centenary programme was the development of new archaeology galleries at National Museum Cardiff. They have now been spectacularly redesigned, with a new focus on survival, society, and status, exploring aspects of change from the arrival of the Romans to the end of the Middle Ages. AMGUEDDFA CYMRU-NATIONAL MUSEUM WALES (029) 2657 3325 (www.museumswales.ac.uk). Ongoing. (See Minerva, this issue, pp. 29-32).

WALSEND, Tyne and Wear


UNITED STATES

ATLANTA, Georgia

LOST KINGDOMS OF THE NILE: TREASURES FROM THE MUSEUM OF FINE ARTS, BOSTON. An unprecedented exhibition of over 250 objects in gold, silver, bronze, ivory, and ceramics from c. 7000 BC to modern times, organised by the museum in conjunction with the Museum of Fine Arts, Boston. MICHAEL C. CARLOS MUSEUM (1) 404 727 6828 (www.carlos.emory.edu). Until 31 August. (See Minerva, March/April, pp. 8-12.)

THE LOUVRE AND THE ANCIENT WORLD. Masterpieces from the founding cultures of Western civilization, including more than 70 works from the Louvre's Egyptian, Near Eastern, and Graeco-Roman collections. Showcasing art dating from the 3rd millennium BC through to the 3rd century AD, the exhibition examines the rise of the museum collections of antiquities under Napoleon, the discovery and decontextualization of hieroglyphs and cuneiform, and the Louvre's role in excavating the cradle of civilization in the 19th and 20th centuries. HIGH MUSEUM OF ART (1) 404 770 4200 (www.high.org). Until 7 September.

BOSTON, Massachusetts

FRAGILE MEMORIES: IMAGES OF ARCHAEOLOGY AND COMMUNITY AT COPAN, 1891-1990. This exhibition celebrates the archaeology of one of the most important Mayan sites and its effects on the development of the local community. Featured are photographs printed from nearly 10,000 negatives from 19th century glass plate negatives that were recently digitized. PEABODY MUSEUM OF ARCHAEOLOGY & ETHNOLOGY, HARVARD UNIVERSITY (1) 617 495-1022 (www.peabody.harvard.edu). Until 31 October.

CHICAGO, Illinois

MESOPOTAMIAN GALLERY REOPENS. The largest collection of Mesopotamian art in the United States has been reinstalled within a new climatized wing. The 2500 pieces (not all of which are on display) include a monumental human-headed bull from Kishsabur, the mate of that in the Baghdad Museum, and a number of those that appeared in the 3rd millennium BC. ORIENTAL INSTITUTE MUSEUM (1) 773 702 9520 (www.oii.uchicago.edu).

THE ANCIENT AMERICAS. A ground-breaking new permanent 5757-square-metre exhibition with more than 2200 artefacts covering 13,000 years of Amerindian peoples from the Arctic to the tip of South America. Included are reconstructions, videos, and interactive displays. THE FIELD MUSEUM (1) 312 922 9410 (www.fieldmuseum.org). Until 21 September.

DENVER, Colorado

BENIN: ROYAL ARTS OF WEST AFRICA. Featured are some splendid examples of Benin medieval sculpture. ART INSTITUTE OF CHICAGO (1) 312 443 3600 (www.artic.edu). Until 21 September.

CORAL GABLES, Florida

EXCAVATING EGYPT. Antiquities from the important collection established at University College London in 1892 by the famous Egyptologist Sir William Flinders Petrie, are displayed in the museum's new permanent galleries. LOWE ART MUSEUM, UNIVERSITY OF MIAMI (1) 305 284 3535 (www.lowemuseum.org). Until 2 November (then to Lexington, Kentucky).

IDAHO FALLS, Idaho


INDIANAPOLIS, Indiana

TO LIVE FOREVER: EGYPTIAN TREASURES FROM THE BROOKLYN MUSEUM. The first venue for an exhibition of the Egyptian treasures for defeating death and achieving eternal life. It comprises 107 objects including a cofin of a Thoban monarch, other coffins, the mummy and mummy portrait of Demetra, statue, stone and pottery vessels, and jewellery by one of the world’s finest collections of Egyptian art. INDIANAPOLIS MUSEUM OF ART (1) 317 923 3313 (www.iama.org). 20 July – 7 September (then to Sarasota and Norfolk).

MABLUI, California

THE HOPE HYGEIA: RESTORING A STATUE'S HISTORY. The Roman marble statue of Hygeia from the Los Angeles Museum of Art probably came to Ossia in 1797. Historic restoration parts from the 19th century removed in the 1970s have been reintegrated. THE GETTY VILLA (1) 310 443 7075 (www.getty.edu). Until 1 September.

MIAMI, Florida

EXCAVATING EGYPT. Antiquities from the important collection established at University College London in 1892 by the famed Egyptologist Sir William Flinders Petrie, who excavated in Egypt for over 50 years. LOWE ART MUSEUM, UNIVERSITY OF MIAMI (1) 305 284 3335 (www.lowemuseum.org). (See CORAL GABLES, Florida.)

NEW YORK, New York

FROM THE LAND OF THE GODS: ART OF THE NILE VALLEY. Over 50 of the museum's finest examples of Nubian sculpture, painting, and ritual objects from c. AD 1200 to the present time. RUBIN MUSEUM OF ART (1) 212 629 5000 (www.rnm.org). Until 10 November.

MASTEBORWS FROM THE MORGAN: NEAR EASTERN SEALS. Some of the best examples of these magnificent miniature works of art, c. 3500-330 BC, from the extensive collection formed by J. Pierpont Morgan. With their intricately carved surfaces, they represent the largest body of visual information to survive from the ancient Near East. THE MORGAN LIBRARY AND MUSEUM (1) 685 0008 (www.themorgan.org). An ongoing exhibition. (See 'Egyptic, Art of the Ancient Near East: 'A Seal Upon Thy Heart' by Dr Eisenberg, Minerva, May/June 1996, pp. 25-32; July/August 1998, pp. 8-17, on this collection – both available as replacement cover £5 or 10 postage included.)

MEDITERAL AND RENAISSANCE TREASURES FROM THE VICTORIA AND ALBERT MUSEUM. As the V&A is undergoing extensive renovations, it has loaned 135 masterworks to the Met. Most of these have not been viewed in New York before, including the Carolingian ivory cover of the Lorsch Gospels. ART INSTITUTE OF CHICAGO MUSEUM OF ART (1) 212 879 5500 (www.metmuseum.org). Until 17 August.


NEW GALLERY FOR THE ART OF NATIVE NORTH AMERICA. 90 works of art from several millennia BC to recent times with the addition of loans from the collections of Ralph T. Coe and Mr and Mrs Charles Diker. METROPOLITAN MUSEUM OF ART (1) 212 879 5500 (www.metmuseum.org). Until 17 August.

NEW PERMANENT GALLERIES FOR HELLENISTIC, ETRUSCAN, AND ROMAN ART. A completely refurbished Roman Court is the focal point of the reinstallation. The cibulium from the villa at Boscoreale and the Black Bedroom from Boscoreale.
AMARNA: ANCIENT EGYPT’S PLACE IN THE SUN. More than 100 ancient artefacts never before on display, including statuary of gods, goddesses, and royalty, monumental reliefs, golden jewellery, as well as paintings from the royal family and artists’ materials from the royal workshops of the Amarna period. This exhibition has been extended indefinitely and will include the head of Tutankhamun wearing the Blue Crown from the Metropolitan Museum. UNIVERSITY OF PENNSYLVANIA MUSEUM AND ARCHAEOLOGY AND ANTHROPOLOGY (1) 215 898 4000 (www.museum.upenn.edu). Ongoing.


PROVIDENCE, Rhode Island A CODE OF HONOUR: CLOTHING AND TRADITION IN THE LOST WORLD OF RHODE ISLAND SCHOOL OF DESIGN (1) 401 454-6500 (www.risd.edu/museum/chin). 1 August – 30 November.

SANTA ANA, California ARTS OF ANCIENT CHINA: A 5000 YEAR LEGACY. A new permanent exhibition with nearly 75 works includes objects from the museum’s own collection, and some loans from private collections, representing the evolution of Chinese technology, art, and culture curated by experts from the Shanghai Museum. BOWERS MUSEUM (1) 714 567 3600 (www.bowers.org).

WASHINGTON, DC EXPLORING THE EARLY AMERICANS: THE JAY I. RISKLAR COLLECTION. Selections from more than 300 artefacts, maps, documents, paintings, and prints recently donated to the Library. These provide an insight between Native American and European explorers and settlers. Included are interactive displays. LIBRARY OF CONGRESS (1) 202 707 5000 (www.loc.gov/exhibits/). Permanent exhibition.

HIDDEN TREASURES FROM THE NATIONAL MUSEUM, KABUL. 228 stone and stucco sculptures, bronze, ivory, painted glassware, and gold bowls and ornaments — including a complex folding gold crown — from four major sites: Tepe Fullol, Al Khamam, Tillya Tepe, and Begram. NATIONAL GALLERY OF ART (1) 202 737-4215 (www.nga.gov). Until 7 September (then San Francisco, Houston, and New York). Catalogue. (See Minerva, March/April 2007, pp. 9-12.)


CROATIA
ZAGREB EGYPTIAN COLLECTION EXHIBITION OPENED. Some 600 antiquities from the Middle Kingdom to the Roman period, including the renowned ‘Zagreb mummy’ with its wrappings: the Etruscan ‘linen book’, one of the world’s longest known Etruscan texts. ARCHAEOLOGICAL MUSEUM (385) 1487 3101 (www.azm.hr).

CZECH REPUBLIC

DENMARK
COPENHAGEN ANCIENT CYPRUS AT THE DANISH NATIONAL MUSEUM. THE A.C. LEVENTIS GALLERY. www.permanentdisplay.dk. More than 300 ancient Cypriot art objects dating from 2500 BC to the Iron Age, collected since the early 19th century. Includes fascinating sculptures excavated from the Sanctuary of Athena at Lindos, Rhodes, in 1902-1914. DANISH NATIONAL MUSEUM (45) 3313 4411 (www.natmus.dk). (See Minerva, July/August 2002, pp. 22-24.)

EGYPT
CAIRO THE ROYAL MUMMIES. 12 additional mummies have now been added to display in the new room of the Pharaothic mummies, including Ramesses II. THE EGYPTIAN MUSEUM (20) 2 575-7035 (www.egyptianmuseum.gov.eg). Permanent exhibition.

FRANCE
BLESBRUCK-RENHEIM, Moselle THE BARBARIAN’S TREASURE. About 1000 objects, 500 in iron, 200 in bronze, and ten in silver; the largest hoard of Roman metal found outside Italy. The treasure was lost from south-west Gaul in AD 260 by the invading Alamans and recovered from a boat sunk in the Rhine. PARC ARCHEOLOGIQUE EUROPEEN (33) 387 35 02 20 (www.archeobs.com). Until 26 October.

BLOIS, Loire-et-Cher KERAMOS: 7000 YEARS OF CERAMICS. Over 400 pieces of pottery from the Neolithic to the 19th century, including ancient Greek and Gallo-Roman material from the Chateau’s collection. CHATEAU ROYAL DE BLOIS (41) 254 33 26 98 (www.musee.chateaublois.fr). Until 21 September.

CHATEAUX
NAPOLEON AND EGYPT, CHILDREN’S MUSEUM, MUSEE DE CHATEAUX (33) 234 341 139. Until 28 September.

Greece

ATHENS
THE EGYPTIAN COLLECTION. Recently reinstalled is a major collection of antiquities donated over many years by two Greeks living in Egypt, Ioannis Dimitriou and Alexandros Rostiakov, including the magnificent bronze statue of Takshiti, inlaid with precious metals. NATIONAL ARCHAEOLOGICAL MUSEUM (30) 210 821 7717 (www.odysseus.culture.gr). Until 20 December.

The Eleftherios Venizelos Museum of Fine Arts, the first of its kind in Greece, features examples of the work of Greek artists from the 19th and 20th centuries. ELEFTHERIOΣ ΒΕΝΙΖΕΛΟΣ (30) 210 821 7717 (www.odysseus.culture.gr). Until 20 December.

HONG KONG
METAL, WOOD, WATER, FIRE, AND EARTH: GEMS OF ANTIQUITIES COLLECTIONS IN HONG KONG. The Chinese Antiquities Gallery features over 580 exhibits. Some 400 of these are on loan from private collections representing the superb achievements of the ancient Chinese. HONG KONG MUSEUM OF ART (852) 2721 0116 (www.kiasg.gov.hk). Permanent. Catalogue. (See Minerva, March/April 2006, pp. 19-22.)


Israel

JERUSALEM
BELIEF AND BELIEVERS: ANCIENT ART FROM THE ISRAEL MUSEUM. Some 30 selected antiquities of critical and artistic merit shed light on the religion and rituals of Israel’s early inhabitants, including a statue-dating about 12,000 BC. ROCKEFELLER MUSEUM (972) 628-2252 (www.imj.org.il/rockefeller). Ongoing.


The Archaeology Galleries at the Israel Museum are closed until further notice as part of the museum’s campus renewal programme. ISRAEL MUSEUM (972) 2 670 8811 (www.imj.org.il).

Three Faces ofMonotheism. The sculptures, contracts and coins of the shared symbols of Judaism, Christianity, and Islam represented in antiquities, as an important key to understanding the foundations and developments of monotheism and its beginnings in the Jewish, Christian and Islamic worlds. BIBLE LANDS MUSEUM (972) 2561 1066 (www.bilmj.org). Ongoing. (See Minerva, Jan/Feb 2008, pp. 20-21.)

Italy
ADRIA, RAVENNA
THE MUSEO ARCHEOLOGICO has opened a new section to display its collection of Etruscan antiquities. MUSEO ARCHEOLOGICO DI ADRIA (39) 042 621 612 (www.archeologia.beniculturali.it). Ongoing.

AIDONE, ENNA
THE MUSEO ARCHEOLOGICO reopened last year after three years of refurbishment. It is here that the Morgantina Venus brought back to Italy from the Giotto Museum will be displayed, together with the artefacts found on the site of the Greek and Roman city of Morgantina (39) 9358 7307. Ongoing.

BOLOGNA
THE MUSEO ARCHEOLOGICO has re-organised the Greek section of its collections. Pride of place has been given to the beautiful head of Athena Lemnia, a copy of a bronze original of the 5th century BC by Phidias, and to a 6th century amphora signed by Nikosthenes. The collection unifies private and public bequests, in addition to the important collection assembled by the painter Pegaso Pegli (1755-1860). Included are more than 200 Greek and Italian vases, 395 pieces of jewellery with precious stones and cameos, as well as statuary and funerary reliefs (39) 051 275 7211 (www.comune.bologna.it). Ongoing.

CORTONA, Arezzo
THE MUSEO DELL’ACCADEMIA ETRUSCA E DELLA CITTÀ has reopened with a new installation and new objects on permanent loan from the Archaeological Museum in Florence, and from current excavations near Cortona. PALAZZO CASALI (39) 057 563 7235 (www.cortonasacci.it). Ongoing. (See Minerva, January/February 2005, p. 37.)

MANTUA
GREEK ART CONQUERS ITALY. PALAZZO TE. (39) 037 636 9198 (segreteria@centrotelapazze.it). Until 6 July.

MARASSO, Tuscany
THE MASSACUCCOLI is now visible in situ after a long restoration. TERME DI MAS- SACUCCOLI (39) 033 397 8308. Ongoing.

MATELICA, Macerata
ANCIENT PICENES IN MATELICA. A new exhibition which explores this still little known ancient culture. On view, the objects recently excavated from Picene necropolises. PALAZZO OTTONI (39) 073 778 2744. Until 31 October.

MELFI, Potenza
THE MUSEO ARCHEOLOGICO NAZIONALE in the Norman castle of Melfi, where the First Crusade was initiated in 1089, has recently been restored and its museum refurnished. On view are artefacts ranging from prehistoric to Ilmman period, including the famous 2nd century sarcophagus from Rapolla (39) 097 223 8726 (www.archeopoia.arlti. beniculturali.it). Ongoing.

MILAN
ANCIENT MILAN - 5TH CENTURY BC - 5TH CENTURY AD. A new section within the museum illustrates 1000 years of the archaeological history of the city of Milan through scale models and artefacts. MUSEO ARCHEOLOGICO (39) 028 645 1456 (www.comune.milano.it). Ongoing.

MONTELUPO, Firenze
THE MUSEO ARCHEOLOGICO is now open. With a wide range of excavated objects, incorporating the former collections of the Museo della Ceramica (39) 055 554 1547 (www.museomontelpuo- li.it). Ongoing.

MONZA, Milan
THE MUSEO DEL TESORO DEL DUOMO has reopened after ten years. Among the rare objects on view are the great Corona Ferrera, a longobard crown of the 7th/8th century AD used to crown kings and emperors, and the gold and silver hand of the Longobard queen Teodolinda and 5th century AD ivory dyptichs (39) 039 380 7722 (monza@giararteco.com). Ongoing.

NAPLES
ZEALOUS STATION. On show are the results of excavations undertaken when the underground line was built across the city. MUSEO ARCHEOLOGICO NAZIONALE (39) 081 442 2149 (www. archeoana.arlti.beniculturali.it). Until 30 November.

TEXTILES FROM UNDER VESUVIUS. Extensive exhibition focusing on the various kinds of textiles found in the cities buried under the lava of Mount Vesuvius together with objects depicting various weaving techniques. MUSEO ARCHEOLOGICO NAZIONALE (39) 081 442 2270 (www.archeona.arlti.beniculturali.it). Until 30 November.

NAXOS, Sicily
NAXOS ARCHEOLOGICAL PARK is now open to the public. Visitors may explore the area of the ancient Greek main religious sanctuary of the city colony, fortified walls, port, the small peninsula of Schisò, and archaeological museum (39) 094 251 010 (www.aegastigninaxinos.it). Ongoing.

PERUGIA
MUSEO ARCHEOLOGICO NAZIONALE. New exhibition space has been added to include the Giuseppe Bellucci collection of armour, musical instruments, the Etruscan tomb of the Cai Cutil family and its funerary goods (39) 075 575 9682 (www.archeopoia.arlti).
PISA
ROMAN SHIPS. The archaeological site where Roman ships were discovered almost intact in 1989, and the Cantiere delle Navi Antiche di Pisa where these are being restored can now be visited by appointment on Fridays, Saturday mornings, and Mondays. CENTRO DEL RESTAURO DEL LEGNO E NAGNATI (39) 055 321 5446 (www.navipisa.it).

PONTECAGNANO, Salerno
NEW ARCHAEOLOGICAL MUSEUM has opened, documenting the Etruscan expansion in Southern Italy (39) 089 848 161 (www.cocchiervi.org). Ongoing.

RAVENNA
OTOUM: THE ART OF LIVING IN ROMAN HOUSES IN IMPERIAL TIMES. Life in the Roman domus and villa of the 2nd and 3rd centuries AD as shown in recreations of the various rooms and by actual statuary, mosaics, and frescoes. CHIESA SAN NICCOLE (39) 0544 63163 (www.ottum-ravenna.com). Until 5 October.

RIETI
THE MUSEO DEI SABINI has recently reopened with an excellent selection of archaeological finds relating to the culture of the pre-Roman Sabine tribes in the region. MUSEO CIVICO DEI RIIETI (39) 074 648 8530 (www.apt.net.it). Ongoing.

RIMINI
EXEMPLE. THE ANTIQUE RENAISSANCE IN ITALIAN ART. Antique models for Renaissance art from Frederick II to Andrea Pisano CASTEL SISMONDO – (39) 0541 783100 (www.mostraexempla.it). Until 7 September.

HOUSE OF THE SURGON. The archaeological site of the 2nd century AD Roman (Domus del Chiurgo), with its interesting mosaics, is now open to the public at Piazza Ferrari. The house was located on the northern side of ancient Anurnum, near the harbour (39) 054 170 4426. Ongoing.

ROME
ETRUSCAN ART. Etruscan civilisations in Latium including Vulci, Tarquinia, Cerveteri, and Veii, and their relationship with Rome. The exhibition also includes a spectacular reconstruction of the temple of Apollo at Veii with its statues restored and assembled in their original setting PALAZZO DELLE ESPOSIZIONI – (www.palazzoexposizione.it). From October to January 2009.

MUSEO DEI FORI IMPERIALI has opened inside the so-called Markets of Trajan. This presents the development of the Imperial Fora and displays many of the works of art found there. MERCATI DI TRAIANO (39) 068 207 7337 (www.archeologia.beri culturali.it). Ongoing.

THE EMPEROR’S TRIUMPHS. An exhibition devoted entirely to this imperial Roman tradition, expressed through sculpture and other media. COLISEUM (39) 064 202 9206. (www.archeologia.beniculturali.it). Until 14 September.

THE HOUSE OF AUGUSTUS ON THE PALATINE. Four fresco rooms painted in vibrant colours covered in the 1970s have been opened to the public following 30 years of restoration, along with the House of Livia, the emperor’s wife (39) 064 890 3504 (www.archeologia.beniculturali.it). (See Minerva, May/June, p.4.)

THE HOUSE OF THE VESTAL VIRGINS, THE TEMPLE OF ROMULUS, the 8th century AD church of SANTA MARIA ANTIQUA AND THE ORATORY OF THE FORTY MARTYRS IN THE FORO are now reopened to the public after 30 years of prolonged restoration. Bookings: (39) 063 996 7700 (www.archeologia.beniculturali.it). Ongoing.

VIA FLAMINIA ANTICA. The first virtual archaeological museum in Europe presents a journey along the Via Flaminia including the archaeological area of Corpettana and the villa of Livia, emperor Augustus’ wife, at Prima Porta. MUSEO NAZIONALE ROMANO – TERME DI DIOCLEZIANO (39) 064 202 9206 (www.vlab.itab.cnr.it/flaminia). Ongoing.

NOSTOLI. ANCIENT MASTERPIECES RETURNED FROM THE UNITED STATES. An exhibition of the Greek, Etruscan and Roman masterpieces brought back to Italy from the United States on loan to the Roman Museums. The display starts with the medieval lapidary, which presents objects from the 8th to the 13th century AD, including sculptures, jewellery, a large black-and-white mosaic from the cathedral of Acqui, and the treasure of Desana, comprising Longobard and Ostrogoth metalwork. PALAZZO MADAMA (39) 011 443 3501 (www.palazzomadamotorino.it).

VENICE
ROME AND THE BARBARIANS: THE BIRTH OF A NEW WORLD. An important exhibition including 1000 antiquities from museums in Europe, America, and Africa. Examined is the complex relationship between the Roman conquerors and the natives of other countries in Europe, Asia Minor, and North Africa, by shedding light on the richness of techniques and technical skills of the ‘barbarians’, with emphasis on Late Antiquity and the Middle Ages. PALAZZO CRASSI (39) 049 523 1680 (www.palazzograssi.it). Until 20 July (then to Bonn). Catalogue. (See Minerva, May/June, pp. 13-15.)

VERONA

KOREA
OPENING OF THE NATIONAL MUSEUM OF KOREA. The new state-of-the-art complex has now opened, celebrating the 60th anniversary of the museum’s foundation. (82) 2 2077 9000 (www.muse um.go.kr).

MONACO
THE QUEENS OF EGYPT. A major exhibition with some 250 masterworks relating to the queens and their royal families collected by Christiaan Ziegler from 40 Egyptian, European, and American museums. Included are sculptures and reliefs of Cleopatra and Nefertari and a colossal statue of Queen Teye from Cairo. GRIMALDI Forum (377) 99 99 2000 (www.grimaldiform). 12 July – 10 September.

THE NETHERLANDS
LEIDEN
ANIMAL MUMMIES. 73 Egyptian animal mummies, including a crocodile, jackal, serpents, and a baboon from the Academic Medical Centre of Amsterdam, all X-rayed in 1999-2003. The exhibition includes X-rays of the animals and a film. RIJKSMUSEUM VAN OUDHEDEN (31) 71 516 3163 (www.rmo.nl). Until 1 March 2009.

NIMJEGEN
LUXURY AND DECADENCE: ROMAN LIFE ON THE GULF OF NAPLES. 170 marble sculptures, frescoes, bronze statues, and a private bath, from homes at the foot of Mount Vesuvius. Most of these are from the National Archaeological Museum of Naples, with 3D animation. MUSEUM HET VALKHOV NIJMJEKEN (31) 24 36 08 805 (www.museumhetvalkho v.nl). 23 August – 4 January 2009.

SLOVAKIA
BRATISLAVA
THES: THE CITY OF GODS AND PHARAOHS. Antiquities from the Predynastic Period to the Baroque from, Czech, Slovak, and German museums presented by the Archaeological Museum of Bratislava. FODRIRADE EXHIBITION PAVILION (421) 02 5934 9141 (www.blbs.sk). Until 31 August.

SLOVENIA
LJUBLJANA

SPAIN
BARCELONA
SARCOPHAGI FROM ANCIENT EGYPT: GARDENERS OF AMON IN THE VALLEY OF THE QUEENS. A number of sarcophagi, 25 boxes, lids, and sarcophagus fragments from the tombs of the princes Kaewhaset and Setherkhepeshef, sons of Ramesses II. These were discovered in the Valley of the Queens in 1903, from the Egyptian Museum of Turin, but exhibited here for the first time. The museum has enlarged its facilities for temporary exhibitions. MUSEU EGIPECI DE BARCELONA (34) 93 488 0188 (www.museupeci.com). Until 30 September.

MADRID
EGYPT’S SUNKEN TREASURES. The astonishing discoveries made by Franck Goddio and his team of underwater archaeologists. These comprise more than 400 objects from East Canopus, Heracleion, and Alexandria, including three colossal (1m-high) pink granite statues. PALACIO DE CRISTAL (34) 1 708 535 8682. Until 31 August.

PALMA DE MALLORCA
PRINCIPES ETRUSCI: BETWEEN EAST AND WEST. An exhibition exploring the eastern origins and art of the Etruscans with objects from the Louvre, the Vatici, and several other Italian museums. CADIX
SWITZERLAND
BASEL
ANCIENT TIMES IN THE MOVIES... ON THE WAY TO A CULTURAL HISTORY OF ANCIENT TIMES IN THE MOVIES. SKULPTURHALLE (41) 61 261 52 45 (www.skulpturhalle.ch). Until 2 November.


GENEVA


ZURICH
KINGS ON THE TIGRIS: THE MEDIAN AND ASSYRIAN RULES. An exhibition of cuneiform tablets, seals, and other small objects in addition to copies of the monumental reliefs in museums in Europe, New York, and Baghdad. ARCHAEOLOGISCHE SAMMLUNG DER UNIVERSITÄT ZURICH (41) 61 261 52 45 (www.archinst.unizh.ch). Until 31 August.

TAIWAN
EXQUISITE BEAUTY: ISLAMIC JADES. Areas in which Islamic jades have been recovered are relatively few and far between. One of the principal sources is the Kunlun mountains in eastern Central Asia, which provided not only Chinese artisans with raw materials, but also those in the Timurid Empire in Central Asia (1370-1506), the Mughal Empire (1526-1857) in Southern Asia, and the Ottoman Empire (1300-1923). NATIONAL PALACE MUSEUM (886) 2 881 8573 (www.npm.gov.tw). Until 31 July.

TAIPEI
NATIONAL PALACE MUSEUM REOPENED. Following four years of renovations, the museum, housing one of the world’s greatest collections of Chinese art, has reopened with many treasures on show for the first time, including Northern and Southern Sung dynasty ceramics. NATIONAL PALACE MUSEUM (88 2 2881 2021 (www.npm.gov.tw/en).

THAILAND
BANGKOK
NEW CERAMIC MUSEUM. Opened in March 2003, the collection holds over 2000 ceramics donated by Suriat Oiasanamrung, mostly from Thailand, as early as c. 300 BC and through the 19th century, featuring Khmer ceramics from Thai kilns and a major collection of ceramics from the 14th to 16th century Tak-Mon kilns in western Thailand. SOUTH-EAST ASIAN CERAMICS MUSEUM (66) 2 902 0299 (www.museum.hu.ac.th).


10-12 July. IKUWAS: THE THIRD INTERNATIONAL CONGRESS ON UNDERWATER ARCHAEOLOGY. The Nautical Archaeology Society (NAS) in conjunction with project partners, the Institute of Field Archaeologists, and the Institute of Archaeology, University College London will host the largest conference on underwater archaeology ever held in Britain, with support of an award of £15,000 from the prestigious British Academy World Congress Grant. The Congress will be preceded by a three-day Professional Development Field School, and followed by optional excursions. For further information see: www.ikuwas3.com.

12-20 July. NATIONAL ARCHAEOLOGY DAY. The aim of this annual event is to encourage everyone, especially young people and their families to visit sites of archaeological/historical interest or museums, heritage and resource centres, to see archaeology in action and to take part in activities on-site. Events will be taking place all over the United Kingdom. Details to be confirmed. UCL Institute of Archaeology, University College London 31-34 Gordon Square. For more information please contact: Sophie Cramble, Marketing and Events Officer, Council for British Archaeology. Tel: (44) 020 7944 0904 or 671 471; e-mail: nash@UCL.ac.uk.

16 July. EGYPT UNDEAD: A WALK THROUGH KENSAL GREEN CEMETERY. Explore the influence of ancient Egypt on the funerary architecture and monuments of Victorian London. Cathie Bryan, UCL Petrie Museum. Kensal Green Cemetery. Contact: Dr Debbie Challis. Tel: (44) 20 7679 4138; www.ucl.ac.uk. 2pm.

27 July – 1 August. THIRD INTERNATIONAL COLLOQUIUM ON PREDYNASTIC AND EARLY DYNASTIC EGYPT. The British Museum. Contact: Alison Cameron, Tel: (44) 0207 323 8306; e-mail: acameron@thebritishmuseum.ac. uk. Website: www.origins3.org.uk.

14-15 August. MEMPHIS IN THE FIRST TWO MILLENNIA. Conference at the Australian Centre for Egyptology, Macquarie University, Sydney, NSW. Contact: Linda Evans. Tel: (61) 2 9850 8850; e-mail: LindaEvans@humn.mq. au. Website: www.gillform.bhs.mq. au.edu.

1-3 September. PHARMACY AND MEDICINE IN ANCIENT EGYPT. Conference hosted by the KNH Centre for Biomedical Egyptology, University of Manchester and the National Research Centre, Cairo. Contact: Professor Rosalie David, Tel: (44) 0161 275 2647; e-mail: Rosalie. david@manchester.ac.uk Website: www. knhcentre.manchester.ac.uk.

LECTURES

UNITED KINGDOM
BLOOMSBURY SUMMER SCHOOL 14-18 July. ANCIENT EGYPT BEFORE THE PYRAMIDS. Dr Kathryn Piquette, UCL.

14-18 July. HEALTH, DISEASE AND MEDICINE IN ANCIENT EGYPT. Ms Joyce Filer.

21-25 July. THE RISE AND FALL OF MIDDLE KINGDOM EGYPT. Mr George Hart.

21-25 July. FLINDERS PETRIE AND HIS HERITAGE: EXPLORING THE PETRIE MUSEUM. Ms Lucia Gahlin and Ms Jan Picton.

28 July – 1 August. TUTANKHAMUN AND THE AMARNA SUNSET. Dr Alan Dodson and Ms Lucia Gahlin.

28 July – 1 August. THE INTERNATIONAL AGE: FROM EGYPT AND GREECE TO IRAQ, 1500-500 BC. Dr Paul Collins.

4 August. THE RAMESSEAN AGE IN CONTEXT: GREAT KINGS AND THEIR SUBJECTS. Dr Karen Sowell.

4 August. FROM AGAMEMNON TO ALEXANDER: FIFTEEN HUNDRED YEARS OF GREEK CIVILISATION. Mr George Hart.

Contact: The Director, Bloomsbury Summer School, Department of History, University College London, Gower Street. Tel: 020 7679 3622; e-mail: bloombury@egyptology. ucl.ac.uk; www.egyptology-ucl.ac.uk.

19 July. CLEOPATRA’S NEEDLE: THE JOURNEY. Talk at the UCL Petrie Museum on the history of this ‘London’ monument. For those who want to make the journey, the talk finishes at the Needle on the Embankment at 1.30pm. Dr Debbie Challis, UCL Petrie Museum. Contact Dr Debbie Challis. Tel: (44) 20 7679 4138; www.ucl.ac.uk. 12pm.

28 July. IVORY AND GOLD IN THE DELTA: EXCAVATIONS AT TELL EL-ARKHAMA. Kryzof Czajka, Raymond and Beverly Sackler Foundation Distiguished Lecture in Egyptology, British Museum. Tel: (44) 207 323 8306.

CALENDAR GUIDELINES

Calendar listings are free. Details should be sent at least six weeks in advance of publication.

Please send listings to:
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