Blombos Cave (BBC), situated near Still Bay in the southern Cape, lies some 100 m from the coast and 35 m above sea level. The site was discovered by the author in 1991 and initial excavation of the Middle Stone Age (MSA) levels was by him and Cedric Poggenpoel in 1992. Later his team of excavators included Judy Sealy, Royden Yates and Karen van Niekerk.

The interior of the cave contains 55 m² of visible deposit with an estimated depth of ±4 to 5 m at the front and ±3 m toward the rear. When excavations commenced in 1992 the cave entrance was almost totally sealed by dune sand and c. 200 mm of undisturbed aeolian sand overlay the surface of the Later Stone Age (LSA), indicating no disturbance of the cave’s contents since the final LSA occupation c. 290 years ago.

Sterile yellow dune sand 50 to 600 mm thick, named BBC Hiatus, blew into the unoccupied cave during lowered sea levels about 70 000 years ago. Shortly afterwards the cave entrance was blocked by a >40 m dune. It is likely that the cave only reopened after the mid-Holocene (c. 5 000 to 3 000 years ago) when high sea levels eroded the base of this dune 30 m below the cave, causing the dune at the entrance to subside. BBC Hiatus separates the LSA and MSA across >95 per cent of the excavated area and provides visible evidence that the LSA occupation did not disturb the underlying MSA deposits. Possible exceptions are squares E2/F2 and E3/F3 (see ‘Excavation layout, p. 2), where the sterile dune layer is a relatively thin 20 to 50 mm, probably because of clearing, or the excavation of bedding hollows by LSA people. However, even where the BBC Hiatus level is thinnest there is no visual evidence that LSA people disturbed MSA deposits.

The magnificent group of Middle Stone Age beads found at Blombos Cave

The five uppermost layers below BBC Hiatus are assigned to the M1 phase (see ‘stratigraphy’, p. 2), in which small basin-shaped ash and carbon hearths are common. Carbonised sand and organic ‘partings’ a few millimetres thick act as visual markers for the separation of discrete occupation layers. M1-phase lithics are typified by Still Bay-type bifacial foliate points. Two slabs of engraved ochre, bone tools and an engraved bone came from this phase, as reported in The Digging Stick (Henshilwood 2002:1).
Four layers typified by carbonised deposits, large hearths and shellfish comprise the M2 level, but few bifacials were recovered in this phase. Shaped bone tools, probably used as awls and projectile points, came mainly from the CFA/CFB/CFC layers in M2. Dominant in the M3 phase are shellfish deposits and a high density of ochre pieces; the M3 lithic assemblage has yet to be analysed, but a preliminary study by Dr Marie Soressi of the University of Bordeaux in France is in progress.

Directly dating MSA sites older than about 40 000 years is problematic because they are beyond the range of radiocarbon (C14) dating and two luminescence-based dating methods were thus used at BBC. Optically stimulated luminescence (OSL) dating was applied by Zenobia Jacobs, Geoff Duller and Ann Wintle at Aberystwyth University, Wales, to the aeolian dune layer separating the LSA and MSA layers. OSL signals from single aliquots and 1 892 individual quartz grains were measured on three samples from the sterile dune layer separating the LSA from the MSA. This gave ages (in years) of 69 200 ±3 900, 69 600 ±3 500 and 70 900 ±2 800. Two samples from the M1 phase yielded a combined OSL age of 75 600 ±3 400 based on measurements from both single aliquots and 4 800 individual quartz grains. Thermoluminescence (TL) dates by Drs Tribolo, Valladas and Mercier from the Laboratoire des Sciences du Climat et de l’Environnement, Gif-sur-Yvette, France, for five burnt lithic samples from the M1 phase provide a mean age of 77 000 ±6 000 years. Provisional dates using the OSL method for the M2 phase are c. 78 000 and >100 000 for the M3 phase.

**Perforated shell beads**

Thirty-nine *Nassarius kraussianus* perforated shell beads were recovered from the M1 phase dated at 75 000 years and two from the older M2 phase, which probably derive from the phase above. A further 24 beads from the M1 phase are under study. Analysis of the beads was done in Cape Town and Pretoria and at the University of Bordeaux by Francesco d’Errico, Marian Vanhaeren, Karen van Niekerk and the author. Commonly called the tick shell, *N. kraussianus* is a scavenging gastropod adapted to estuarine environments. The estuaries closest to BBC are those of the Duivenhoks and Goukou Rivers located 20 km west and east of BBC respectively. We know that the shells were not brought to the site accidentally by animals, as *Natica tecta*, the only known predator, is a gastropod confined to the same biotope as *N. kraussianus*. It was also unlikely to be a human food item as the 100 living shells we collected in the Goukou and Duivenhoks estuaries yielded a dry soft tissue mass of 0.814 g, hardly sufficient to warrant their collection as food. The distribution of the age classes of the shell beads is evidence that they were not introduced to the cave via wracks of *Zostera capensis*, an estuarine grass known to have been used as bedding material by LSA people. This method of introduction would have
resulted in all ages/sizes occurring, but this is not the case in the MSA levels. We are therefore certain that the shells were deliberately collected at the estuaries and brought back to the cave to be used as personal ornaments.

All the recovered shells are deliberately perforated and most have unique medium-size perforations located near the lip. These perforation types are absent in living populations and almost absent in dead collections. However, the most important evidence showing they were strung as beads, possibly for necklaces or clothing decoration, is that microscopic analysis of the shells reveals a distinct use-wear consisting of facets that flatten the outer lip or create a concave surface on the lip. None of these features are present in specimens that died naturally, or in living populations.

A similar concave facet on the MSA shells is often seen opposite to the first one, on the parietal wall of the aperture. The use-wear patterns on the tick shells are consistent with friction from rubbing against thread, skin or other beads and are the principal factor that defines the MSA shells as beads. Microscopic residues of ochre detected inside the shells may also result from such friction or from deliberate colouring of the beads. No similar wear patterns or ochre are present on natural tick shell assemblages.

Although tick shells are also found in the less than 2 000-year-old LSA levels at the cave, we know that the MSA beads do not derive from these levels. First, optically stimulated luminescence (OSL) measurements on single quartz grains from the dune layer that separates the MSA and LSA indicate that sand from this layer is not disturbed. Other factors supporting the antiquity of the MSA beads are –

- *N. kraussianus* beads from LSA levels have no wear facets similar to those on MSA beads;

- shell beads from the MSA are dark orange or black in colour, while those from the LSA are white or pale beige;

- 52 per cent of the LSA shell beads have broken lips, while this is observed in only two MSA specimens; and

Evidence of ochre and wear on the beads

Evidence for an early origin of modern human behaviour has long remained elusive. Recent finds in >70 000 year old African sites of objects bearing abstract engravings, large quantities of pigment and formal bone tools have been rejected as clear-cut evidence for behavioural modernity on the grounds of context, dating and/or because deliberate symbolic intent could not be warranted. The BBC beads add an unambiguous marker of symbolically mediated behaviour to the list of innovations already identified in the MSA. It clearly reflects the acquisition of fully modern
cognitive abilities, including language, by southern African populations at least 75 000 years ago.

World’s oldest kitchen?

Stone tools dating to 2.6 to 2.5 million years ago, along with associated broken animal bones, have been found in Gona, Ethiopia, at a place that served as the earliest known controlled setting for food preparation, according to Southern Connecticut State University. The Awash Valley in the Afar region, where the objects were found, has yielded many important remains associated with hominins within the last 30 years. The stone tools consist of broken cobbles deliberately modified for making simple knife-like flakes, according to Sileshi Semaw, director of the Gona Project.

Researchers could link only one of the bones to a specific animal species. It is an anklebone from an equid, a mammal belonging to a family that includes animals such as horses, asses and zebras. The objects were excavated in a hillside covered with extensive volcanic matter dating to 2.52 million years ago. They remained sealed, like a time capsule. Manuel Dominguez-Rodrigo, a visiting professor at Harvard University, commented: ‘... we will report that in several of these early sites we have gathered a substantial amount of cut-marked bones. These cut marks were created by the use of the stone tools to butcher animal carcasses. There is thus a clear functional link between the stone tools and the bones.’ Because there is no record of early humans using tools to butcher animals before this date, the kitchen site indicates an important shift in diet. Discovery News, 21 November 2003

Ethiopia find from ‘Adam and Eve’ time

They walked the earth 160 000 years ago and they are the ancestors of every human being, it is believed. In the wake of the discovery of the oldest human remains ever, so-called Herto Man is giving up his secrets. An international team of scientists believes that the three fossilised skulls – two adults and a child – unearthed in Ethiopia’s Awash Valley date precisely from the time of a genetic ‘Adam and Eve’. They say they represent a crucial stage of evolution when the facial features of modern humans arose. ‘This set of fossils is stupendous,’ said Prof. Clark Howell of the University of California. Prof. Chris Stringer, head of human origins at the Natural History Museum in London, said the finds were some of the most significant discoveries of early Homo sapiens so far.

Scientists investigated the site after Dr Tim White of the University of California spotted ancient stone artefacts and a fossil of a butchered hippopotamus skull in the sediments. The human fossils were found in a remarkable state of preservation sandwiched between two volcanic layers that could be dated. The most complete fossil is an adult male skull lacking a lower jaw. The skulls have modern features – prominent forehead, flattened face and reduced brow. ‘They are not completely modern, but close enough to call Homo sapiens,’ said Dr White. ‘With these new crania we can see what our direct ancestors looked like.’ According to him the earliest fossils of Homo sapiens found until now were just 100 000 years old and less complete. The scientists have decided on the subspecies name Homo sapiens idaltu for the fossils to differentiate them from contemporary humans, Homo sapiens sapiens. Idaltu means ‘elders’ in the Afar language. The date of the fossils is significant because it matches precisely the age at which Homo sapiens is supposed to have diverged from its ancestral line as calculated from the genetic analysis of human DNA. ‘We have lacked intermediate fossils between pre-humans and modern humans, between 100 000 and 300 000 years ago; that is where these fossils fit,’ White said. ‘Now the fossils record meshes with the molecular evidence.’

The skull of the child suggests it died at the age of six or seven. Delicate cut marks on the bone suggest it was subjected to mortuary rituals such as defleshing. The presence of apparently polished surfaces on the skull indicates that it was handled repeatedly after death. June 2003

Readings on Blombos Cave

ARCHAEOLOGY IN AFRICA

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AN UNUSUAL ROCK PAINTING OF A SHIP FOUND IN THE ATTAKWASKLOOF

Hugo Leggatt and Renée Rust

In July 2003, a Working for Water team came upon a previously unknown rock art site in a wooded kloof on the farm Crane’s Crest in the Ruitersbos region of the Western Cape, north of Mossel Bay. The farm belongs to Paul and Joy Crane. Shortly after the discovery, Hugo Leggatt, who had been recording sites in the region, was invited to inspect it. On a first viewing the site appeared to offer little that was unusual. However, on closer inspection a great deal of excitement was generated when he recognised the shape of a sailing ship. On a second visit, a tracing of the image by Renée Rust brought out the details of a charcoal drawing of a threemasted ship with square-rigged sails on the mainmast (Fig 1).

The site is a sandstone overhang, facing east, and measures about 12 m in width and over 4 m in depth. To the right, where a deep and fairly broad crevice leads back into the rock face, black lines on the flat surface form the outline of the ship. Numerous fine-line paintings of human figures and animals in red ochre are present to the left and right of the ship drawing. These are in a poor state of preservation. Some images are executed in yellow while one bi-chrome eland is partially visible. Apart from these, there are 13 red handprints and numerous black finger dots.

The rock art

Three generations of superimposed art are evident on the panel with the image of the ship. The ship is painted on a smooth part of the rock face, which stands out because of deep grooves on either side. Reddish-orange paint was applied to this area and may have been daubed or rubbed to cover the rock surface. This serves as a background ‘canvas’ on which the depiction of the ship was executed. The charcoal image of the ship was placed over a series of handprints and dots that, in turn, are superimposed on fine-line paintings. The handprints are in red, while the discernible finger dots are in black. The black pigment of the dots has dissolved in places owing to water seepage and run down the rock face.

The fine-line paintings underlying the two layers include an orange human figure with black stripes, which follow the contour of its torso and arms. The stern of the ship is partially superimposed over this figure. No legs are visible, which may be due to poor preservation. Another possibility is that the legs were not painted since the torso may be flowing out of an irregularity in the rock face. The left arm of the figure also appears to be going into the crevice, as if entering the irregularity of the rock face that frames the ship on the right. Only the upper part of the arm is shown up to the crack. Smaller indistinct red paintings are close to the image described above; one of a tiny jackal-like animal with a long tail and the other a grid-like image of approximately 140 small (at times less than 4 mm across) white, yellow and black dots, arranged in rows. The grid has a conical shape.

The ship

After the initial landfall by Diaz in 1488, sailing ships visited Mossel Bay on many occasions during the next 200 years and it is probable that it was there that the artist would have studied the ship. Although the site of the drawing is over 30 km away from the coast, those details of the

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vessel visible above the waterline were executed on the rock face in remarkably clear detail. This attention to detail and the placement of the depiction over older paintings may suggest that some significance was attached to the image.

The image is 410 mm in height, from the hull to the top of the mainmast, and 400 mm from stern to bow. At the top of the mainmast the outline of a black rectangle with two horizontal parallel stripes across it suggests a flag of a tricolour pattern. A flowing line is depicted near this flag on the mainmast. This may represent a cravat, a broad ribbon-like flag, normally attached below the finial (the top of the flagstaff) of mainmasts. Cravats flown trailing near flags were common on Dutch ships of the 16th and 17th centuries (Crampton 1979), as is clearly shown in Fig 2. Another rectangular depiction suggesting a flag is visible at the stern of the ship on, or close to, the mizzenmast. It has an orange-coloured background with black stripes crossed over forming a cross, and may be an ensign of sorts.

The image shows a high structure at the stern, on the right of the depiction, which may represent a poop deck, typical of sailing vessels of the 16th and subsequent centuries (Kemp 1976). The poop is the after-most deck, raised above the quarterdeck of a ship, and houses the shipmaster’s cabin. Certain lines projecting from the bow on the left may relate to the bowsprit, a spar running out from the front of a sailing vessel. Two black lines run horizontally across the stern of the image while a third line is visible along the full length of the hull. These lines probably represent wales, an extra thickness of wood bolted onto the sides of a ship for extra protection (Kemp 1976; Giggal 1988). At the stern of the ship a rectangular image is visible where a rudder is normally situated on a sailing vessel.

**Cultural context**

Close study of the rock painting shows detail that tallies with historical evidence about sailing vessels rounding the Cape of Good Hope for 200 years or so from the end of the 16th century. In particular, the probable tricolour design of the flag on the mainmast suggests that the image on the rock face represents a Dutch vessel.

Prior to 1595 the only European sailing vessels known to have visited Mossel Bay were Portuguese ships, namely at the time of the first landfall by Diaz in 1488 and the next three fleets of Da Gama in 1497, De Ataide in 1501 and De Nova in the same year. Portuguese sailing ships did not fly tricolour flags and also attempted to give the southern African coast a wide berth after the death of d’Almeida in a skirmish with the Khoekhoen in Table Bay in 1510. The first Dutch sailing vessels to round the Cape of Good Hope were those under the command of Cornelis de Houtman. On 4 August 1595 they anchored in the bay of Aguada de Sambras, today known as Mossel Bay. They spent a week in the bay and bartered iron for cattle with local indigenous people (Raven-Hart 1967).

The rigs shown are typical of the period and there are features of the three sailing vessels that are reminiscent of the rock art drawing of a sailing ship. The Dutch East Indiaman was designed for both trade and war and kept its design for about two centuries.

Each of the Dutch East Indiamen has a foremast, a mainmast and a smaller mizzenmast towards the stern. The foremast and mainmast carry two square sails, while the mizzenmast carries a lateen sail, copied from the Arabs. By the mid-1700s the rigging of the mizzenmast was altered to include a second sail above the mizzen sail. The Dutch tricolour flies from both the fore and main masts, as well as from the stern.
For roughly half a century the Dutch made frequent use of Mossel Bay. Johan Wurffbain, writing of a 1632 voyage, mentions Mossel Bay 'where the ships usually touch' (Raven-Hart 1967). After 1652 this pattern changed. With a protective fort and a garrison whose express purpose was to serve as a refreshment station for the Dutch East India Company's ships, Table Bay became the obvious stopping point of choice.

Taking into account both the details in the drawing that tally with the above descriptions of sailing vessels, as well as the historical record, one may guess the date for the drawing as being in the first half of the 17th century.

There are some other instances in the Western Cape where images of ships have been reported. At Valsfontein near Ceres line drawings of three ships appear to have been executed with an ochre 'pencil' (Fig 4). Some 70 km away, in the Skurweberg above Porterville, there is another painting, in red ochre, which may represent a galleon (Fig 5) (Johnson et al 1959)*.

This form of rock art imagery is thought likely to be among the most recent in the rock art tradition in the Western Cape and may have been executed by Khoekhoe herders over older San hunter-gatherer art (Manhire 1998; Parkington 2002).

Discussion

Trading for indigenous livestock from the 15th century on resulted in contact between Europeans and the Khoekhoe pastoralists of the Mossel Bay hinterland. From the <i>Diario</i> of Da Gama's 1497 voyage we have the mention of people with sheep and cattle at the bay of Sam Bras. A century later little had changed. De Houtman, as described, also traded for sheep and oxen with the local 'red-brown' folk. The historical references give an impression that a fluidity in land use existed in the area surrounding the Attaqua and Outeniqua mountains. Hessequas, Gouriquas and Attaquas occupied low-lying areas south of the coastal mountains, while the Attaquas are mentioned as the people of the mountainous regions. At this time, people of mainly hunter-gatherer lifestyle were living in the Little Karoo.

Conclusion

The detail of the rigging shown in the drawing of the ship in Attakwaskloof raises the question whether there is an implied understanding of the purpose of the masts, sails and spars. If so, the artist may have been of European origin. This implies in turn that the drawing was done as graffiti over the painted images of indigenous peoples. The location of the site is well hidden and not near any thoroughfare, so that it may have afforded a haven of sorts. The reason why a European would have executed a drawing of this kind and in such a location is enigmatic, to say the least.

If an indigenous artist(s) was involved, the choice of content and placing may infer a non-visual level of meaning and symbolic reification. The site is typical of rock shelters in mountainous areas occupied and utilised by indigenous people throughout the western and southern Cape. The placing of the drawing on a downward-sloping rock face, making it uncomfortable

* The Porterville painting has recently been adapted as the logo of SAHRA's National Survey of Underwater Heritage.
and difficult to work on for any length of time, further suggests that the artist may have been occupied with more than the mundane. This is inferred from the fact that the superimposing of the ship over layers of finger paintings and fine-line paintings could be a testament to knowledge of the supernatural potency of the site in the rock art tradition of southern Africa. These factors would seem to place the depiction of the ship firmly within the rock art of the Western Cape. The style and content would, furthermore, place it towards the very end of that tradition.

References

Roman Paris was not in Paris, but Nanterre
The historic Paris – the Gallic town of Lutetia captured by Julius Caesar in 52 BC – lay not on the island in the centre of the modern French capital but in a suburb 10 km to the west. Recent excavations at a building site in the suburb of Nanterre have brought to light a pre-Roman settlement that far outstrips in density and sophistication traces discovered on the Île de la Cité – until now regarded as the base of the Parisii tribe. ‘Nanterre is the only agglomeration of size identified on the territory of the Parisii. Until now no significant remains from an occupation predating the Roman conquest have been found on the Île de la Cité,’ said Alain Bulard of the directorate for cultural affairs for the Paris area. The Nanterre site, discovered near the bank of the Seine at the end of 2003, has revealed a rigidly planned urban area constructed around two parallel cobbled streets and a market square.

Ditches drained away waste-water and each home, constructed out of wood and a clay-straw mixture, possessed its own stone-lined well. Items found on the scene include bronze brooches, coins and a cooking fork. Taken together with a previously discovered site – also dating from around 200 BC – containing kilns and other evidence of handicrafts, the entire Gallic settlement spread over 15 ha, which is nearly double the size of the supposed Paris proto-capital.

Le Monde/AFP, 26 February 2004

THE CAPE GALLERY

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Title: African Renaissance fetish
Artist: Jonathan Comerford
Comment: I have combined art and tradition into one piece. African artists and artisans, at the same time as their European Renaissance counterparts, were producing bronze castings of the same calibre and beauty. Coupled with that, African traditional ways were being adhered to, as religion was in Europe.

As a Euro-African, it is disconcerting that Africa still needs to blame external forces as the major oppressor of Africa. Instead, it needs to focus more on its rich artistic and cultural history to truly emancipate it from mental slavery.

This image portrays the beauty of African artifacts and is a fetish.

The Cape Gallery deals in fine art work by SA artists and stocks a selection of paintings depicting South African rock art.
In an article in the Sunday Independent (Johannesburg, 21 Sep 2003) entitled ‘Spirit of the rocks — preserving the archives of ancient Africa’, journalist Karl Muller articulates the ideas of Brenda Sullivan (1995) and Credo Mutwa (1996) on rock engravings. The article describes the rock art site of Driekopseiland in the Northern Cape, where the engravings are said to be ‘certainly among the oldest known records of Africa.’ This is a rather extravagant claim, which is not supported by archaeological evidence (the site is at most a few thousand years old). Other assertions by these authors involve Phoenicians, Egyptians, Minoans and even Khazar merchants as the makers of rock engravings or as actors on this ‘ancient’ South African stage. It is alleged that there is evidence of human sacrifice and mining by ancient sea-voyagers and adventurers who left messages in Ogham scripts and Celtic crosses and signs of the zodiac in our rock art. Sullivan and Mutwa have attracted a following, including individuals working from an IKS (indigenous knowledge systems) perspective, which is often critical of the ‘scientific establishment’ and of ‘western epistemologies’. Given the narrow margins that separate ‘speculation’ from ‘hypothesis’ and ‘model’ in the generation of innovative ideas (van Loon 2004), how might one distinguish archaeological ‘understanding’ from these conjectures from the fringe?

In his book, A history of archaeological thought, Bruce Trigger provides one perspective when he suggests that ‘archaeologists cannot rule out the possibility that extraterrestrial visitors have influenced the course of human development to some degree, any more than they can exclude the biological existence of purple unicorns. Yet, clumsy, inadequate and uncertain as our present scientific understandings of cultural change may be, they account for what is observed in the archaeological record in both its totality and individual features, while extraterrestrial salvationism keeps alive only by making speculative and always inconclusive claims about isolated phenomena’ (1989:406).

The desire for certainty (to which many of these fringe ideas pander with some success) is what Bertrand Russell (1950) has referred to as an ‘intellectual vice’. Russell expands on the ways of science: what is at issue, he insists, is not so much ‘what opinions are held’ but rather ‘how they are held’. Ideas should be taken up only tentatively, ‘with a consciousness that new evidence may at any moment lead to their abandonment’. It is relevant to examine how the arguments of Sullivan and Mutwa (versus those of archaeologists) are advanced, while their derivation from discredited notions of the past might also be noted.

‘Created by peoples unknown’?

‘Ancient, but as yet undated,’ Karl Muller stated in the article, ‘the rock engravings are a true mystery, created by peoples unknown. Even the San, known for their rock paintings, say they do not know who the engravers were.’ This statement (factually incorrect — see, for instance, Dialkwain in the Bleek and Lloyd records) derives from Sullivan’s writings. ‘The rock engravings,’ she seeks to persuade (1995:91), ‘were the records of many peoples, other than the San... credit was given to the ancestors... Their [San] ancestors could have been almost anyone.’ The scholar whom Sullivan cites in support of this view is Wilman, which is ironic. For while Sullivan proceeds to argue that the engravings were made by the ‘scribes’ of literate traders, possibly merchants of the Khazar Empire, Wilman was actually one of the first researchers here to consider the engravings to be fully indigenous to Southern Africa and likely to be the work of ‘Bushmen’ in particular.

The influential historian George Theal declared that the Bushmen, ‘though gifted with artistic tastes’, were ‘an almost unimprovable race... [who] had become inert and stagnant’: a condition ‘not sufficient to satisfy God’s law of progress’. In an evolutionary sense they represented the lowest stage of humanity and were, quite simply, ‘pure savages’. If all of this seemed self-evidently true, as it apparently did to many people at the time, then the sophistication
evident in South Africa's rock art, and in some of the engravings in particular, clearly posed a difficulty: could these images be attributed solely to such people without the influence (or original authorship) of higher cultures from outside?

Against this background, many renowned scholars, such as Louis Péringuey, believed that the Bushmen were responsible only for the most recent 'decadent art', which was marked by a process of 'conspicuous retrogression'. In the first half of the last century it was widely accepted that South Africa had been occupied by successive waves of migration by different races and peoples. In geographic terms it was a racial and cultural cul-de-sac; earlier racial stock was either wiped out or hybridised. At the time, Schapera (1930:27) could state that 'the stone industries associated in South Africa with the Bushmen were not indigenous to the country, but constitute an invading element which... superseded the two pre-existing stone cultures.' Implicit, too, was the idea that rock art formed part of one or more of the cultural packages introduced to the subcontinent in waves, where the engravings, possibly older than the 'Bushman paintings', may have belonged to an earlier pre-Bushman stratum. Some writers envisaged long-distance cultural influences on an even grander scale, such as in Dart's suggestion in 1925 and again in 1959 that in the 'pictorial art of the Bushmen' there was 'preserved through the lapse of centuries unassailable evidence of the impacts of ancient civilisations of the Eastern Mediterranean and Mesopotamian areas.' None of this left very much room for local agency and the more extreme versions (for these ideas served as a springboard for much elaboration) were frankly racist.

It is rather remarkable that Wilman was prepared to challenge the diffusionist orthodoxy of her day, espoused by such scientific heavyweights as Raymond Dart and in less extreme forms by Goodwin and van Riet Lowe. Her reasoned conclusion, based on careful observation at many sites in the Northern Cape, was that it seemed 'extremely likely' that by far the bulk of the engravings were the work of Bushmen (some were of different authorship in Tswana and colonial contexts) and that there was a 'probability of the engraving practice having developed in South Africa, among certain Bushman tribes'.

Today our understanding of the place of rock art in the Later Stone Age of Southern Africa, and its origins in earlier contexts here, fully vindicates Wilman's assertion (while acknowledging that different authorships were involved in certain rock art traditions) and no serious scholar would defend the kinds of pronouncements to which Dart was prone when venturing outside his field of anatomical expertise.

**Ogham script(s) in SA rock engravings?**

The 'ancient ones' – the unknown non-Bushman rock engravers in Muller's article – are, in Sullivan's book, connected somehow with high priests or sacred kings of 'Old Africa'. She sees the engravings at Driekopseiland specifically as 'notations, perhaps calculations related to the moon, and/or trader tallies'. Here, the 'scribes' of literate traders, perhaps merchants of the Khazar Empire, 'diligently scratched notations on the rocks – rune-like symbols' (1995:94) and 'Celtic crosses' (1995:51). In the Muller article it is stated that Credo Mutwa was 'able to translate some of the symbols found on the rocks using an alphabet called Ogham'.

Relevant here is the influential work of the marine biologist, HB Fell, a Harvard professor who drifted into the field of epigraphic study, displaying, it has been said, more temerity than training and expertise. Many of his claims are easily dismissed as fantastic and improbable: his armchair methodology all but ignored the specific contexts and circumstances of the materials he was interpreting. He was notorious for 'deciphering' so-called Ogham script on artefacts that long pre-dated the invention of the acrophonic alphabet.

One must wonder what the actual evidence might be for Ogham scripts at sites like Driekopseiland, or any other rock art site in South Africa. It can be stated that nowhere here do engravings convincingly and consistently resemble Ogham scripts; nor are there any sup-
plementary archaeological or contextual data that would alert one to this being a possible line for fruitful investigation. Indeed, engravings similar to those at Driekopseiland, far from being peculiar, occur at many sites in this region, where there is positive archaeological evidence that hints strongly (and often exclusively) at a Khoe-San rather than any other kind of association. As far as animal imagery is concerned, statistical profiles between sites (including Driekopseiland) show a remarkably high consistency at a regional level (antelope being the predominant class, eland featuring most prominently, followed by other large mammal motifs, and so on). In these respects one can draw relations of similarity further afield and it is clear that the bulk of rock engravings of the Northern Cape belong broadly within the same kind of tradition as do the paintings of, say, the Maluti Mountains or the Cederberg.

Mutwa proceeds to interpret one particular engraving as the god ‘Bel’ or ‘Baal’ (‘worshipped both by the Phoenicians and by the ancient Babylonian [sic] people’) as indicating a ‘rock of sacrifice: on this rock the person to be sacrificed has had his or her heart torn out of his or her body,’ while other images represent ‘the hearts of three people who were sacrificed upon this rock at different times.’ The rock’s dark surface was ‘due to the blood of the many victims that were slaughtered’. Similar rocks occur on different continents, Mutwa claims, ‘and it is accepted by many scientists that these rocks were engraved by ancient people who traveled throughout the world in ships in search of copper, gold, and tin...’ (1996:192). ‘A number of rocks in addition... show remarkable things of a non-African origin... [one] carries an abacus...’ and there are ‘signs of the zodiac’ never engraved by the Bushmen – proof, in his view, of this ‘gigantic world-spanning culture’ of ‘ancient and half-forgotten seafarers’. To Credo Mutwa’s copper, gold and tin, Brenda Sullivan’s account adds diamonds, while Muller’s article refers to ‘persuasive evidence that it may have been the ancient Egyptians who were here mining diamonds in antiquity’.

Astonishing here is not the alleged accuracy of these insights, nor any trace of authentic indigenous perspectives (for one finds none), but rather the striking resemblance of these ideas, even at levels of some specificity, to colonialist and very definitely non-indigenous notions that located the agency in African history outside of the continent. In the 1890s such ideas were much in vogue in imperialist circles, lending justification and romance to conquest (especially in relation to Great Zimbabwe). In the 1980s they were repeated in a book for use in schools, called Bushman Art (denounced in a review by John Parkington in The Digging Stick, Vol 5(1) 1988, which led to it being withdrawn from circulation). Many of Mutwa’s and Sullivan’s particular generalisations can be put to the test archaeologically and all evidence presently to hand suggests that they must be rejected virtually in their entirety.

As for Driekopseiland, it is possible to understand the engravings in indigenous terms (Morris 2002) without the necessary involvement of Egyptians, Phoenicians, Minoans, Celts or any other ‘higher civilizations’, or signs of zodiacs, or human sacrifices, or items or persons of ‘non-African origin’. No evidence points to any of the latter possibilities, except perhaps in terms of...
leaping generalisations and uninhibited speculation.

Archaeological arguments involve an evaluation of evidence at many levels and bring different kinds of clues to bear in the construction of ideas about the past. A sense of how the problems have been conceptualised previously, and how knowledge has changed, is important to the endeavour. In laying together diverse strands of evidence, an understanding of the way in which they constrain one another is every bit as important as the way they lend support. Epistemological concerns, about observation and generalisation, and holding to a line of reasoning or giving it up to the test, are critical. At the same time, indigenous epistemologies, far from being rejected by a reified 'Western science', may be engaged routinely by archaeologists when they use ethnographic analogy, or ground their interpretations in relevant local perspectives.

At the fringes of the discipline there is less concern with the question of how we know about the past. Cautious reasoning gives way to rampant assertion, often spiced with a twist of 'mystery' and sensation. The resultant claims are ultimately hollow for the reasons noted by Trigger. Proceeding by way of unsupported speculation over isolated phenomena is not likely to yield much understanding.

References

2005 MAPUNGUBWE CALENDAR

The illustrations below show the cover page of the new Mapungubwe calendar for 2005, as well as one of the inside pages. This is more than 'just a calendar' – it is a virtual masterpiece, a collectable that showcases collages of the artefacts and treasures found at South Africa's most important Iron Age site in the far north-west corner of Limpopo Province. The collection of 'The Hill of the Jackal' and surrounding archaeological sites is housed at the Mapungubwe Museum of the University of Pretoria, which supplied the photographs and information for the calendar.

In addition to the cover print, the calendar comprises six full-colour high-resolution prints 440 mm by 660 mm in size, each framed with six die-cut pages that carry two-month-to-view date pads. The individual prints with their descriptions feature the legend and history, the beads, the gold, the clay pots, the Stone and Iron Age eras, and the figurines of Mapungubwe.

The calendar is available to ArchSoc members at just R160 (plus postage and packaging where applicable). The retail price of the calendar is expected to be around R250. The calendar will be available at Trans-Vaal Branch lectures and may also be ordered from Reinoud Boers at 011 803 2681 (h) or boers@iafrica.com).

'Oldest real trace of life' in Barberton

Scientists have discovered evidence of 3,5-billion-year-old bacteria that burrowed into volcanic lava flowing across what is now Mpu­malanga. According to University of Cape Town geologist Prof. Maarten de Wit, it is the oldest real trace of life on earth. De Wit and his collaborators from the universities of Bergen, Edmonton and California found fine tubular structures just micrometres wide and 50 micrometres long sprouting into the glassy edges of submarine pillow lava in the Barberton mountains. The microscopic tubes are lined with traces of datable carbon. The carbon is in a form indicative of organic matter left behind by the bacteria. Barberton is one of only two areas on earth where such old and well preserved volcanic rocks are found.

The Star, 26 April 2004
THE VALUE OF THINGS

Mike Wilson

The concern expressed by Sven Ouzman in The Digging Stick of April 2004 (Ouzman 2004:14) over what he termed ‘official commodification’ of artefacts – the placing of an ‘official’ market value on these – raises the interesting subject of the value of things.

Value is an extrinsic quality that may or may not derive from some intrinsic property of an object. These days value may also be given to non-material things, such as ideas or even names, in the sense that these can be copyrighted or patented. Although Ouzman’s choice of the insured value of the Un-ton Stone was a rather inapt example of ‘commodification’, it provides a useful basis for discussion, as this artefact may be viewed in a number of different ways. Not all the examples are specific to the Un-ton Stone, and some of the examples are based on modern theory, but are placed where they are for reasons of chronology.

1. The Linton Stone is a slab of rock with an artificial deposit of inorganic and organic materials – pigments and binders – on one surface. The rock, quartzite, is widely available, and the pigments and binders may also have been (they have never been analysed, nor has their distribution been studied).

2. For the artist, the relatively smooth outer face of the rock – an intrinsic property – had value as it provided a suitable surface on which he (she/they?) could work. As regards the intrinsic properties of the pigments, their colours and their ability to be converted into paint gave them value. If any of the ingredients were not locally available or abundant, this would have given them added value. The same applies to the binders, their intrinsic properties of miscibility and adhesion being important.

3. If the artist was a shaman, not just some talented ‘sorcerer’s apprentice’ doing his master’s bidding, then the rock face was important as the interface between the here-and-now and the spirit world. The pigments would have had similarly mystical qualities, as perhaps also the binders, depending on what they were. The whole would have had infinitely greater value than the sum of its parts.

4. There is evidence that paintings in some sites were added to or even altered, thus changing the significance of what was there before. We do not know whether these changes were made by the original artists or by others, or the extent to which these changes would have altered the value of the originals.

5. Dr Louis Péringuey, the Director of the South African Museum involved in the acquisition of the Linton Stone, paid what in those days was quite a tidy sum for its removal and transportation to Cape Town. Had he been asked to value this artefact, there can be little doubt that he would have considered this expense irrelevant to obtaining such an excellent example of ‘Bushman’ rock art. He might have found the piece aesthetically pleasing, but its value to him would have been its contribution to the museum’s collection of South African culture.

Part of the Linton Panel, which can be seen in the Iziko-SA Museum Cape Town. [From Fragile Heritage — A Rock Art Field Guide, by D Lewis-Williams and G Blundell]

6. Péringuey could never have imagined that by the end of the century in which he obtained the Linton Stone, theory would have opened the doors to the world of interpretation to the extent that it has, giving the stone value that was unthought of in the past, except of course to the people who made and used the paintings. However, the value these people would have attached to the paintings would have been greatly different from that attached to it by modern interpreters.
7. Stylistically, the Linton Stone is somewhere intermediate between the monochrome and simple ‘stick figures’ of some paintings and the detailed shaded polychrome art of the KwaZulu-Natal Drakensberg. Aesthetic response to the paintings will determine their value to the viewer, but this value is unrelated to, and different from, the value the paintings have as information. In terms of the latter criterion, it is possible for a stylistically simple set of paintings to have more value than a stylistically complex one. In this context, it must be remembered that the Linton Stone is merely a fragment of the whole body of paintings that was in the shelter, so that the information it yields is incomplete in relation to that of everything that was there.

8. A facsimile, accurate in every detail, of the Linton Stone or any other set of paintings would be considered less valuable than the original. However renowned the artists/shamans may have been among their own people, they are unknown to us, so that the value cannot be attached to a name, as, for example, to a Leonardo or a Picasso. The antiquity of the paintings also gives them value, but has no direct relevance to whether they are original or not. Aesthetically or artistically, the copy would be no different from the original, as would the information it provided. The property of ‘originalness’ may be intrinsic, but the value that attaches to it is clearly extrinsic.

9. Rock art in South Africa is regarded as part of the national heritage. This value derives from its intrinsic properties, but is of a totally different quality from the value that attaches to these properties.

10. The Linton Stone was insured for the specific purpose of its being sent to America for exhibition. There being no trade in such artefacts, no market or ‘commodity’ value could be determined, so that the amount was arbitrary. When the panel was returned the policy lapsed. Does this mean that the panel now has no value or that the assigned value remains? A value given for insurance purposes can certainly not be extrapolated to other rock art, whether in museums or still in situ.

The foregoing shows that value is an extrinsic quality and that an object may have a number of values that vary according to the perception of the assessor of that object. Ouzman’s concern over the ‘official commodification’ of artefacts rather puts the cart before the horse. The acquisition and exchange of things are as old as humankind, and public institutions such as museums, art galleries and libraries are relative latecomers on the scene. They cannot rely only on donations or exchanges to increase their collections, nor is fieldwork possible in a number of the disciplines involved. Therefore, if the institutions are to obtain what they require they must be prepared to enter the existing markets. It is not the institutions that ‘commodify’ artefacts and the fact that they are public institutions does not mean that they ‘officially’ sanction trade in them. Reputable institutions will generally not place a monetary value on objects brought to them for identification, but even the information they provide gives the objects a kind of value that may be translated into commodity value.

Reference

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**EVENTS, WEBSITES AND FEES**

**FossilsX3.** The 3rd International Congress of Palaeo­entomology, the 2nd International Meeting on Palaeo­arthropodology and the 2nd World Congress on Amber and its Inclusions will be held from 7 to 11 February 2005 at Hammanskraal. Contact Prof. DJ Brothers, School of Botany and Zoology, University of KwaZulu-Natal, PB X01, Scottsville, 3209. Fax: 033 260 5105. Tel: 033 260 5102.

**Website about archaeology.** Through the website www.about.com/ you can subscribe free to a weekly newsletter that provides access to Archaeology in the Spotlight, Linking to the Past, Guide Sites, etc.

**African Archaeology web directory.** The website www.african-archaeology.net is fully operational, with regular updates being made along the lines of its ‘parent’ directory Anthropology Resources (www.anthropologie.net).

**Rock art papers.** Maarten van Hoek has advised that his ‘Rock Art Investigations’ website is available at http://mc2.vicnet.net.au/home/vhra/web/index.html. The site has been extended with a small selection of papers on which the reader may comment.

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**SA Archaeological Society**

The following subscription rates for 2005 have been agreed to by the Finance Committee:

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*The Digging Stick* 14  
*Vol 21(2) August 2004*
KUDOS FOR DAVID LEWIS-WILLIAMS

Elwyn Jenkins

David Lewis-Williams, Professor Emeritus of the Rock Art Research Institute (RARI) of the University of the Witwatersrand, recently received two awards in the USA. On 2 April 2004 the Society for American Archaeology presented him with its Award for Excellence in Archaeological Analysis. The citation reads:

In recognition of his many contributions to archaeological research worldwide, and particularly with revolutionizing the field of rock art studies with insights from neuropsychology.

For his book The Mind in the Cave (2002), the American Historical Association presented David with its Award for the Best Book for 2003 on History Prior to 1000 AD. Elsewhere, the Cambridge Archaeological Journal singled out The Mind in the Cave to be the subject of a symposium in 2003. The format for its review feature is that the author introduces his book with an overview, after which four scholars review it at length and the author responds at the end. While the discussion is necessarily complex, a few quotations will convey its nature.

Paul Mellars (University of Cambridge Department of Archaeology) introduces his review: 'David Lewis-Williams has written a brilliant, creative and highly readable account of what is surely one of the most remarkable developments in prehistory – the emergence of the spectacular cave art of the European Upper Palaeolithic.' He concludes: 'In my own view, the question of whether the European Neanderthals did have significantly different cognitive capacities from those of modern humans still remains an issue for further investigation, rather than an a priori premise to be assumed. But Lewis-Williams's penetrating analysis of the emergence and character of Upper Palaeolithic art is an important step in that direction.'

E Thomas Lawson (Western Michigan University) observes: 'The Mind in the Cave [shows] how an understanding of altered states of consciousness provided by neuroscience can explain cultural productions such as the cave and rock art of the Upper Palaeolithic period.

What is particularly exciting about Lewis-Williams's work is that it bridges the gap between the social and the psychological and behavioural sciences... Today, because of the cognitive science revolution, some of us operating within the social scientific tradition are much more sympathetic to examining and theorising about the psychological foundations of cultural forms. Lewis-Williams has made a fundamental contribution to this type of explanation.'

Knut Helsøg (Tromso University Museum) takes another line: 'Most researchers today would agree with Lewis-Williams's arguments that the depictions in the caves are not art for art's sake. But I am not willing totally to reject the idea of sympathetic magic, or that totems were represented in the caves, as Lewis-Williams does, simply because both are important in hunter-gatherer cultures... Some day we may be better able to understand the differences between the Neanderthals and Homo sapiens and why images in dark caves were made, what they meant and what significance they might have had in forming and maintaining social and political roles. There are still no exact answers, and might never be such, and perhaps the time has come to extend the search outside the caves, and to other places than in the caves of France. None the less, in The Mind in the Cave David Lewis-Williams presents thoughtful and well-formulated hypotheses and reasoned arguments, suggesting answers that are bound to have an impact on the discussion in years to come. This is truly a challenging and enjoyable book.'

David S Whitley (ICOMOS-CAR, California) gives further ethnographic examples from Native California that support Lewis-Williams's arguments, and continues: 'One value of a new hypothesis or interpretation is its ability to foster new insights and open new avenues of research. What Lewis-Williams proposes with the Quercy example does just that. It can be seen as a model upon which a much deeper and richer understanding of Palaeolithic Franco-Cantabrian prehistory can be based, achieved through a closer interdigitation of the art and artefactual records... As archaeologists, we study material culture because we are interested in under-

Elwyn Jenkins is a Professor Emeritus of English of the University of South Africa. ejenkins@mweb.co.za
standing human society and culture, and (now that behaviourism is dead) these necessarily implicate the human brain-mind. While Lewis-Williams is certainly not the first to raise the issue, *The Mind in the Cave* is a major advance in our understanding of human cognitive prehistory, about which all archaeology ultimately revolves. As a case in point, the origin of human consciousness may seem, at first glance, the least likely of archaeological topics. *The Mind in the Cave* suggests that it may be the most appropriate.'

**David Lewis-Williams** concludes his reply: 'A partial insight is better than no insight at all. The course of true research never did run smooth. Mellars is correct in predicting controversy, especially from those who seek to rehabilitate the Neanderthals. Was there a difference in mental capacity between them and *Homo sapiens*? If so, what was the nature of that difference? *The Mind in the Cave* emphasises the importance of different kinds of consciousness (rather than simply degrees of intelligence) and shows it is differences in consciousness that explain some of the principal features of the Middle to Upper Palaeolithic transition. In answering some – by no means all – of the questions about that period, I hope that the book will lead to a diminution in, not an escalation of, controversy and encourage a tighter research focus in some areas of inquiry.

**References**


**High prices for stone artefacts**

Archaeologists in the USA had believed that only prehistoric Indian pottery brought big prices. But with dwindling supplies and increasing demand by collectors, stone tools are now also starting to bring high prices. In October 2003 a website advertised ‘... the famous, extraordinary Sweetwater biface, a single stone tool, possibly Caddo affiliation, with a particularly fine blade ranging down to 1/16" inch’ at a starting bid of $80 000. The biface dates from 1300 to 1500 and was found in the Southern Plains. **November 2003**

**Earliest use of fire in Europe.** Charcoal at a possible seasonal camp on a tributary of the Avon in Wiltshire may indicate the earliest use of fire in Europe. The site is 250 000 to 300 000 years old. **Sept 2003**

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**Customs and Beliefs of the Xam Bushmen**

Edited by Jeremy Hollmann

More than 125 years ago, at the height of the colonial era in South Africa, a group of people came together in Cape Town under remarkable circumstances. The project upon which they embarked involved nothing less than the writing down of the language and beliefs of the Xam people, a Bushman group that once lived their traditional way of life over much of what is now South Africa. The significance and value of the labours of Wilhelm Bleek, Lucy Lloyd and their Xam teachers are now well-known, but not all of the fascinating material, particularly Xam testimony about their beliefs, is readily available.

*Customs and Beliefs of the Xam Bushmen* brings a wide range of Xam beliefs together in one volume, together with notes and introductory comments. It reproduces the material published in the 1930s by Dorothea Bleek in the journal *Bantu Studies*, and includes a grammar of the Xam language. Maps, original drawings by the informants, and photographs taken in the early 20th Century by Dorothea Bleek of the descendants of the Xam informants make the book attractive and accessible to both specialist and non-specialist audiences.
BOOK/VIDEO REVIEWS

The Golden Rhino


Rainer Bruchmann, a German economist, traveller and enthusiastic promoter of African heritage awareness, has produced a book entitled The Golden Rhino: An African Naissance, with the subtitle An Illustrated chronology of Mapungubwe, Great Zimbabwe and Thulamela. In conjunction, he has scripted a video entitled The Promises of Ophir – An African Odyssey, which is based partly on the book. Both the book and the video are useful in that they summarise a great deal of information and provide interesting material relating to African heritage. To place things in perspective, Bruchmann begins The Golden Rhino with a ‘Time Table’ that covers events from the Big Bang about 14 billion years ago through to the period of australopithecines and the genus Homo. He summarises historical and archaeological data, but admits that ‘no interpretation is once and for all the right interpretation’.

The book could have benefited from careful editorial assessment before publication, but this is something that can be addressed in a second edition. Among the errors that occur are those that relate to the names of species, which should be italicised (as in Homo sapiens sapiens), and factual errors (the coelacanth lived 300 not 3 000 million years ago).

The video includes interesting footage relating to Mapungubwe and other sites of importance. Of special interest is the character Johann Christoph Steffler, a German who was conscripted by the Dutch East India Company and who led an expedition into the interior of southern Africa in 1723. The coverage of historical and archaeological data attempts to touch on many subjects. In the process the video tends to lose fluidity, but together with the book it can be expected to stimulate interest and provoke discussion.

Review by Dr Francis Thackeray, Transvaal Museum, Pretoria

Following the San


This excellent book is the second of a series being published under the title Follow the San... (the first, The Mantis, the Eland and the Hunter, with its accompanying CD, was reviewed in The Digging Stick, Vol. 20(2), last year). All of the proceeds from sales of these books are channelled through the Krakadouw Trust into job creation at the Clanwilliam Living Landscape Project, a community-based heritage and education endeavour aimed at returning the archaeological archive (the products of decades of Cederberg research) to the area and its people.

Whereas the first book was a guide specifically to the Warmhoek Trail, Cederberg Rock Paintings broadens the focus and discussion to the wider region. Here a thousand or more painted sites, strung out along the many stream courses in this mountainous landscape, make it one of the richest areas of rock art in the subcontinent and indeed in the world. The book provides an engaging and accessible introduction to the contexts of the art, from the geological tale of the formation of the landscape and the canons on which paintings were placed, to the archaeology, including the proximity of the art to other archaeological traces, the light this sheds, inter alia, on the age of the paintings, and the identity of the painters. Most of the illustrations in the book – 126 of them, in full colour – detail the paintings and their settings (in a few cases tracings are given alongside to interpret complex or faded images). The illustrations, with the help of the text, allow the reader to look closely at the images themselves, their subject matter and the way they were composed. They also help us to follow the arguments, grounded in Karoo and Kalahari ethnographies, proposed and debated on meaning and motivation, and the histories that are reflected by the paintings. Sophisticated methods of recording sites – including laser scanning – are being deployed, while documentation now includes even the way individual paintings may be framed or drawn out by the daily or seasonal passage of light and shadow from sun or moon.

The book includes two pages of contacts and suggestions for places to stay and to view Cederberg rock paintings, which is in line with the expressed objective ‘to expose the beautiful paintings to as wide an audience as possible and to use the attraction of paintings as a way of creating jobs for local people’. It is an objective one cannot but support. Even if you are not planning a trip to the Cederberg paintings right now, you should get this book.

Review by David Morris, McGregor Museum, Kimberley

Vol 21(2) August 2004
MAN'S DISCOVERY AND CONTROL OF FIRE

The discovery and control of fire by our early human ancestors is considered a milestone in man's evolution. Not only was it a technological achievement that provided humans with a wider choice of food and an extended geographical range, it was also a sign of intelligence, the ability to plan ahead and a unique focus of social interaction. Yet there are wide disparities on the estimates of when exactly the first fire was kindled. Some studies suggest that fire might have been used as long as 1.4 million years ago. This suggestion comes from the discovery of lumps of baked clay found together with animal bones and stone tools at a Stone Age site at Chesowanja in Kenya. However, a burning tree stump or even volcanic heating might be capable of creating the same effect.

More compelling evidence of the use of fire comes from research at the caves of Swartkrans near Johannesburg. Here scientists have found more than 126 fossils from early hominids, as well as 279 fragments of burnt bones dated to around one million years ago. Chemical and microscopic analyses indicate that the bones could have been subjected to temperatures consistent with having been burned in a campfire. More recent studies of the bones, using a process called electron-spin resonance, has confirmed that they were heated to much higher temperatures than would be expected if they were simply caught up in a natural fire, says Anne Skinner of Williams College in Massachusetts. The bones appear to have been heated to temperatures of 600 °C or more, which would normally only be seen in the hearth of a campfire. A brush fire would heat objects to a maximum temperature of about 300 °C. The trouble is, no unequivocal evidence of a hearth has been found at Swartkrans.

The earliest and strongest evidence of the controlled use of fire using hearths dates to about 250 000 years ago, with the discovery of charred fragments of bone that must have been the result of being burnt at relatively high temperatures. Scientists have made these finds at several sites in Europe, such as Vertesszollos in Hungary and Menez-Dregan in northwest France. But hearths do not become commonplace in the archaeological record until about 100 000 years ago. More recent research, however, has pushed back the date at which fire was controlled by more than half a million years. Archaeologists have found fragments of burnt flint and charred remnants from fruit at a site in Israel, where they believe humans had learned to control fire as early as 790 000 years ago. The find is even more unusual in that it falls outside Africa, which is traditionally seen as the cradle of humanity and the place where fire may have been first used.

The latest research comes from palaeontologists from the Hebrew University of Jerusalem, who have found charred fragments of flint, wood, fruit and grains on the shores of an ancient lake at the northern end of the Dead Sea. They sifted through 23 454 seeds and fragments of fruit and 50 582 lumps of wood in their search for burnt specimens. Extensive waterlogging of the site over tens of thousands of years has helped to preserve many of the fragments found. Researchers discount natural causes as responsible for these charred remains. ‘If surface wildfires were responsible for the burning of the organic and inorganic material we would expect to find high frequencies of burned items. However, less than two per cent of the excavated flint pieces and wood fragments are burned,’ they report. They also found that the burnt fragments occurred at several layers in the excavations. This suggests that once the ability to use fire was gained it must have been passed on to later generations. Some of the burnt fragments were found grouped together, suggesting that these early people used hearths.

Richard Klein, an expert on early humans, from Stanford University in California, says the Israeli scientists have made an important discovery. 'I think they have made by far the best case yet for humanly controlled fire before 250 000 years ago.' If humans were using fire in what is now northern Israel 790 000 years ago, it might explain the history of their early migrations to Europe – and how humans were able to colonise what was then a relatively cold region, says Paola Villa, from the University of Colorado.

The Independent, 26 May 2004

ARCHAEOLOGY IN SOUTH AFRICA

Ancient artefacts on W Cape beach

Heavy seas in early April spewed out a myriad of treasures at Sunset Beach, including a teaspoon buried deep in some timber and a piece of plank that could come from a Dutch shipwreck from the 1600s. John Gribble, maritime archaeologist with the SA Heritage Resources Agency, said that it was possible the artefacts and timber were from the same shipwreck that the container vessel Sealand Express came to rest on when she ran aground last year. What appeared to be two cannon balls, pieces of pig iron and a section of wooden hull planking were found wedged into the bilge keel of the Sealand Express after she had been refloated. Gribble said the teaspoon appeared to be a 19th century design, but one piece of wood known as sacrificial planking was likely to be from the 1600s. 'There are close to 150-odd wrecks in Table Bay. Closer to the Salt River side of the bay wrecks are lying three on top of each other in some cases.'

8 May 2004

The Digging Stick Vol 21(2) August 2004
ARCHAEOLOGY IN BRIEF

Oldest Iranian qanat found in Bam. Aerial photographs of the Iranian city of Bam, destroyed in an earthquake last year, have revealed important new archaeological sites. One discovery dates from between 2400 BC and 2600 BC. The history of the city rests on an astonishing network of qanats, huge underground irrigation channels, kilometres long, which are a wonder of Persian engineering. They date to the time of the Seleucids-Achaemenids, more than 2,000 years ago. Studies on pottery found in the area have led to the conclusion that Bam's is the oldest qanat system to be identified in Iran. Qanats tapped water supplies deep below the feet of nearby mountains and routed this towards farms and residential areas. They began to dry out some 800 years ago as a result of foreign invasions and not being cleaned.

Tehran Times, 5 June 2004

Egyptian inscribed slab. Archaeologists have unearthed a stele dating back to Ptolemaic Egypt bearing an identical inscription in three languages – similar to the Rosetta Stone. The 990 mm high and 840 mm wide stone was found at Bubastis, Egypt's capital in the 8th century BC, 90 km north-east of Cairo. A royal decree on the stone mentions King Ptolemy III along with the date 238 BC. It consists of 67 lines of Greek text, 24 lines of Demotic and traces of hieroglyphs. Ptolemy is lauded for importing grain from Syria, Phoenicia and Cyprus to alleviate famine.

Sapa-dpa, 19 April 2004

Huge Roman amphitheatre found. Europe's biggest Roman amphitheatre after the Coliseum has been uncovered in Cordoba, Spain. The find dates from the first century AD, when Corduba, as it was then known, was the provincial capital of Betica in imperial Hispania. The oval amphitheatre seating up to 50,000 spectators measured 178 m by 145 m. Twenty carved gravestones of fallen gladiators, the biggest such collection outside Rome, have also been found inside the amphitheatre. The amphitheatre was abandoned in the 4th century, when Emperor Constantine, influenced by Christianity, banned the murderous sports as immoral.

27 March 2004

Alexandria lighthouse found. Granite masses, one of which weighs 15 t, found in 10 m of water off Alexandria in Egypt are believed to be the remains of Pharos, the lighthouse famed as being one of the seven wonders of the ancient world. The lighthouse was built by Sostratos of quarried stone, embellished by marble and bronze, in the age of Ptolemy (285-246 BC). The stones were fixed to each other by molten lead rather than mortar. At the top of the lighthouse a brazier burnt at night and gave off smoke during daytime. The lighthouse functioned until the Arab conquest in 641 AD. In 673 King Bebars ordered its restoration and built a mosque on its upper part. An earthquake in 1100 resulted in the collapse of most of the lighthouse.

arabicnews.com, 6 March 2004

Geological time gets a new period. Geologists have added a new period to the calendar of earth's history. The Ediacaran Period covers the time from 600 million to about 542 million years ago in recognition of the fact that the last part of the Precambrian Period was a special time before the first arrival of shelled animals when weird, mesh-like creatures of uncertain affinity lived. Ediacaran is part of the Neoproterozoic, when multi-celled life forms started to take hold on earth after the end of the last ice age, or the Cryogenian Period.

May 2004

Scientists may study Kennewick Man. After years of legal dispute, scientists have been given permission to study Kennewick Man, the 9,300-year-old remains found in Washington state in 1996. A court found that a federal grave-protection law does not apply because there is no evidence connecting the remains with any existing tribe. Kennewick Man has drawn scientific interest because it is one of the oldest, most complete skeletons found in North America, with characteristics unlike modern Indians.

Associated Press, 4 February 2004

New temples found in Cambodia. A further seven temples have been found north of Siem Reap. The most recently discovered temple, about 15 km north of Angkor Wat, is a late-ninth to early-10th-century Brahman temple that is unrecorded in any known documents.

10 September 2003

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