

A PARTICULAR CLASS OF BIRD THERIANTHROPE DEPICTED IN SAN ROCK PAINTINGS

Pieter Jolly

Magical flight while in an altered state of consciousness is a widely described behaviour associated with ritual functionaries/shamans in a range of cultures in many parts of the world (Halifax 1982; Balzer 1996; Eliade 1964; Duerr 1985; and many others). Garlake (1995: 80–82, 157), Parry (2000: 90–91, 114) and Hubbard and Mabrey (2007) have discussed images in Zimbabwe rock art related to magical flight, while Hollmann (2003; 2005a; 2005b; 2022) and Laue (2022) have drawn attention to San rock paintings in South Africa of birds and, in particular, of bird therianthropes in the Langkloof (western) and the Groot Winterhoek (eastern) sections of the Cape Fold Belt respectively.

Hollmann has argued that bird therianthropes in his research area represent 'swift people', a form of bird-therianthrope. Rust (2021) suggested that this class of paintings contains depictions of fish-like mythological 'water maidens' and bird-like 'swift people'. Laue points to similarities in the depictions of bird therianthropes in her research area and the 'swift people' in Hollmann's research area, but also points to differences. She considers the bird therianthropes



Fig. 2: A hook-headed bird therianthrope from the Groot Winterhoek area. Courtesy of Ghilraen Laue.

in the two areas to be similar enough to each other to constitute a 'community of practice', an expression of beliefs in shamanic flight that, while initially very similar, nevertheless diverged to some, relatively small, degree with time and over space. (Figs 1 and 2.)

Another, puzzling, category of rock paintings



Fig. 1: A swift therianthrope from Leeublad, Western Cape. Gray scale. Courtesy of Jeremy Hollmann.

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OTHER FEATURES IN THIS ISSUE

- 7 New ArchSoc President and Vice-President
- 9 Seeing red: our ancient relationship with ochre and the colour of cognition – *Irina Matuzava*
- 13 Context and realisation of the first Steenbras Dam a century ago – *Arne Singels and Kevin Wall*
- 20 Digitisation of a petroglyph site – *Lynette Boardman et al.*



Fig. 3: Copies of Pager's tracings of evolved alites. Courtesy of Jeremy Hollmann.

associated with flight, and the focus of this article, exists in the Maloti-Drakensberg and surrounds. These have been termed 'flying buck' (Lee and Woodhouse 1964), 'winged creatures' (Vinnicombe 1976), 'alites' (Pager 1971; 1975; 1994) and 'trance buck' (Lewis-Williams 1981; Lewis-Williams and Dowson 1989; see also Hollmann 2003 and Laue 2022). Pager illustrated more than 40 examples of this kind of being depicted in the art (Fig. 3). What are the attributes that define this particular class of 'alites'?

Lee and Woodhouse (1968: 15) mentioned that one form of them constitutes 'four-legged animals closely resembling antelope with rudimentary wings'. The other form they described (1968: 15) as 'creatures with well-painted shaded polychrome antelope heads but with bodies, apparently human in form, where

the legs are always bent at the knees, and are then tucked under the body in a crouching position with the arms stretched at full length, outwards and upwards over the back'.

Pager (1972; 1994) linked this particular class of paintings to the more general class of humans depicted with avian characteristics, which he termed 'alites' (singular 'ales') as taken from the Latin word meaning 'flying creatures'. However, the 'flying/trance buck' have their own characteristic features that set them apart within the more general 'alites' class. They depict a fusion of humans, birds and, almost always, antelope, painted in particular postures. Pager (1994: 97, my bracketed addition) describes them as 'antelopes and zoomorphs with bird-like bodies having pterygoid (wing-like) extremities, streamers, or

bird-like tails. Many of them are depicted without legs or with their legs folded close to their body, a posture which could suggest they are kneeling' (see also Pager 1971: 345).

Two panels I present and discuss at the end of this article show conclusively that these specific beings were the final evolved form in a sequence of transformation from human to part-human part-bird, to a sometimes imaginary bird or, in the great majority of cases, to antelope with avian characteristics. Since



Fig. 4: Bird therianthropes and other imagery. Stow and Bleek (1930). Detail from plate 58.



Fig. 5: A being with human, bird and antelope features from Aliwal North. Feathers are depicted along the bottom of the wing in a faded white paint.

all seem to be associated with flight but they do not invariably have antelope characteristics, I term them here 'evolved alites' rather than 'flying buck' or 'trance buck'.

The meaning of the evolved alites

What/who do these paintings recorded by Pager and others represent? Lee and Woodhouse (1964:3; 1968; 1970) considered it possible that they were 'an imaginative portrayal of spiritual or religious beliefs, that the human spirit takes the form of a "flying buck" on leaving the body'. Pager (1972; 1975; 1994) suggested that at least some of the therianthropes in the art represented spirits of the dead or, more specifically, stated that some of the evolved alites might represent spirits of the dead who initially took on antelope form (antelope-headed and hooved therianthropes) and were then further transformed into flying creatures (1975: 62). In this form, liberated from the weight of the body, they were able to fly to the land of the dead in the sky. Pager (1994) considered it unlikely that any of the therianthropes, including the evolved alites, depict 'tranceformed' San shamans.

Vinnicombe (1976: 239–242) suggested that the winged creatures depicted in the art of her research area within the Maloti-Drakensberg, which include what I term the evolved alites, may have represented some form of spirit connected with death. 'A postulated interpretation of the winged creatures is that they represent some form of spirit connected with death ... If we accept the association between spirits, wind and birds, many of the painted scenes which include representations of winged humans, winged buck and other therianthrope winged creatures are likely to be connected with the death of both humans and animals ... (B)irds occupy an intermediary position between the supreme spirit (sky) and human beings (earth). That winged creatures should be used as a symbol of mediation between life and death, between the physical and the spiritual, would seem to be an

inherent tendency in the human mind' (Vinnicombe 1976: 240–242). She stated further (1976: 332, my bracketed addition) that people painted with part-antelope part-human features, which would include many of the evolved alites, may have represented the spirits of dead game sorcerers, who 'were particularly prone to become "spirit people" when they died, and (whose) apparitions could take on many forms'.

Lewis-Williams (1981: 84–101) initially argued against the idea of flight's being associated with any but a small number of the evolved alites, suggesting that interpretations of this kind had been overemphasised. According to him, the apparent wings of most of these beings represented the arms-back position of San shamans dancing to acquire potency in trance and were thus largely unconnected to wings and flight. The 'streamers' frequently associated with these beings he did not consider to be trailing behind the beings and being invariably related to flight, as was argued by other researchers, but rather predominately representing potency *entering* a shaman's body.

For these and other reasons, Lewis-Williams (1981: 100) proposed that the beings be termed 'trance buck' rather than 'alites' or 'flying buck'. However, in a later publication (Lewis-Williams et al. 1993: 285, Fig. 8), a painting of what seems to be an alite of the kind focused on here, but without any antelope features, is described as a shaman transformed into a bird. And Lewis-Williams and Challis (2011: 142) link the evolved alites with antelope heads to the 'transformation of a shaman into an antelope coupled with the experience of flight in trance'. This interpretation does not exclude the idea that the arms of the shaman, held in the backward position while entering trance, evolve into wing-like appendages streaming behind them.

Hollmann (2003) and Laue¹ (2022) also interpret the evolved alites as depictions of the sensation of flight experienced by 'tranceformed' San shamans, al-



Fig. 6: Bird therianthropes from Nsangwini, Swaziland. Enhanced by D-Stretch. Courtesy of Jeremy Hollmann.



Fig. 7: A man depicted with outstretched arms that have grown feathers. Courtesy of Neil Lee.

though Hollmann suggests that other interpretations, not incompatible with trance experience, can profitably be used to understand the meaning of these creatures. He links them also to spirits of the dead and to the mythological Primal Time beings who combined human and non-human forms and characteristics (see also Jolly 2002).²

Two panels in the art that show the transformation of people into evolved alites

There are a number of south-eastern San paintings, aside from the kind illustrated in Fig. 3, that also appear to depict people partially transformed into birds or birds and antelopes (Figs 4 to 7). They are relatively rare, but much rarer are panels that depict the transformation of people first into birds and then into the class of evolved alites, which forms the focus of this article.

Pager (1975: 62) arranges images from different sites to form a suggested sequence of transformation from human to evolved alite, but I am aware of only two panels that depict this form of transformation depicted

by the painters themselves. One is a panel from the Aliwal North area that shows the transformation, stage by stage, of a person into an antelope-headed creature with feathers and then, it seems, into a strange bird of some kind that hovers above the transformation scene (Fig. 8).

However, perhaps the most important panel for deciphering the meaning ascribed by the San artists to the type of alites investigated here is a panel comprising two paintings that unambiguously links a painting of a person in the process of transforming into an alite (the outstretched arms have become wings with feathers) to a painting alongside that is directly associated with the other and depicts a creature that, while not having an antelope head, has wings, feathers and a body posture that place it firmly within the evolved alites class (Fig. 9). No other panel shows as clearly as this one the direct connection between a person transforming into a bird and then the subsequent form taken by this person into an evolved alite.³

Conclusion

In conclusion, we are left, I believe, with seemingly different (but ultimately related) interpretations of the category of evolved alites illustrated by Pager. They could depict the form of a living San shaman, who in trance has acquired antelope features, wings and feathers, aided, just possibly, in a few cases, by his wearing a bird costume of the kind known to be worn by some shamans in other parts of the world (eg Waite 1966) and who has transformed into the specific human/bird and (usually) antelope form taken by the beings discussed here (Fig. 10).⁴



Fig. 8: A transformation scene from the Aliwal North district in which a human grows feathers on his body, acquires an antelope head and what may be parts of a wing, and is apparently fully transformed into a bird hovering over the stages of transformation depicted

Having achieved this, he/she would, in trance, have flown in a magical fashion to different realms to engage with the spirits in order to heal the sick, to counter malign spirits or enlist the help of benevolent spirits, as described in the ethnography of San shamans and shamans in other cultures.⁵ They could also, as Lee, Woodhouse, Pager, Vinnicombe and Hollmann suggest, reference the spirits of the dead. But I would add, in conjunction with Vinnicombe and Hollmann, not just spirits of any dead people but one of the various therianthrope forms taken on by sorcerers/shamans at death. The sorcerer/shaman may be shown transformed at death into a bird and then into this particular form of spirit with its characteristic kneeling posture and mixture of human, avian and very often antelope features.



Fig. 9: A person shown transforming into a bird and then into a evolved alite. From a Lesotho scene.

Neither of these two explanations, the one linked to the spirits of the dead and the other to the

'tranceformation' of shamans into a part-animal form, excludes the other in San religious thought.⁶ Living San shamans believe they actually die in trance, temporarily become spirits of the dead and, in therianthrope form, together with the help of the power of the animal-spirit helpers (in this case birds and, almost always, antelope) with whose forms they have fused, visit the dead in the spirit world. It is likely, therefore, that the form believed to be taken by the spirits of San shamans after permanent death, caused by the failure of their bodies and their entry into the spirit world, would have been the same as the part-human, part-antelope/bird form assumed by these people in the temporary 'death' of trance (Jolly 2002; Hollmann 2003).

Furthermore, the spirit world was a realm directly associated with the ancient Primal Time when humans and animals were still in hybrid, therianthrope form. Therianthropes of all kinds, including the evolved alites discussed here, can therefore be linked through their hybrid human-animal forms to all of the following: 'tranceformed' San shamans in therianthrope form (in the case of the alite therianthropes, they are depicted in magical flight); the spirits of dead shamans who have taken on therianthrope form; and the 'people of

¹ Laue (2022) suggests that these paintings, while related through their common theme of flight and transformation to those investigated by her and Hollmann in other areas, are sufficiently different to constitute a 'constellation of practice' rather than a closer 'community of practice'. As in convergent evolution, the evolved alites in the Maloti-Drakensberg, Laue argues, share some meanings with those bird therianthropes discussed by her and Hollmann in other areas of the country, but she concludes that these arose independently and in isolation from each other due to the considerable distance between the Maloti-Drakensberg and the other two regions.

² See Solomon (1997 and other publications) for interpretations that link therianthropes, in general, to both the spirits of the dead and the ancestral Primal Time beings.

³ Close to this panel are paintings of another 'bird-man' and what appears to be a small imaginary bird.

⁴ See Koons (2019) for a description of Native American dances centred on the transformation of people into birds.

⁵ See Low (2011) for links between birds and healing among some San groups.

⁶ See Guenther (1999, 2020a, 2020b) for the interconnectedness and fluidity of categories of San religious thought and practice.

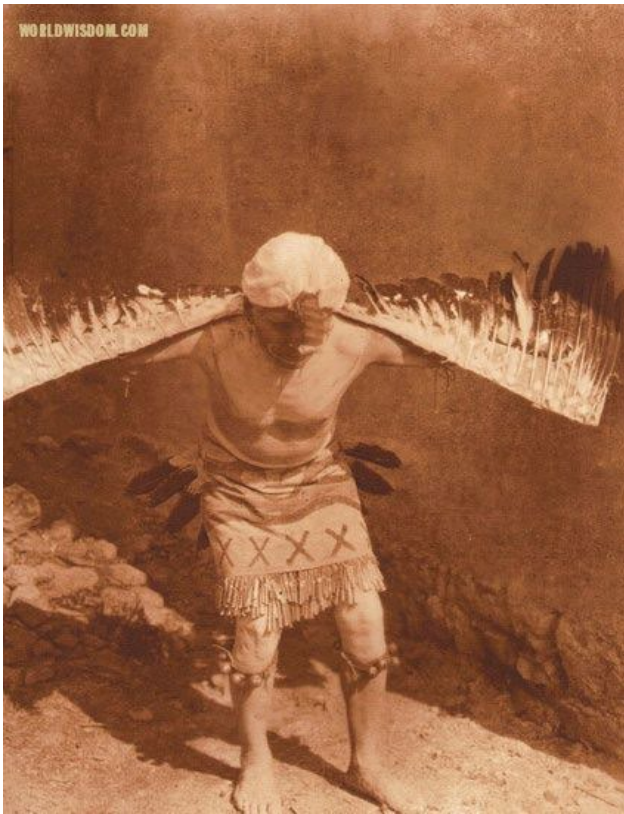


Fig. 10: A native American with eagle wings attached to his arm. From San Ildefonso, USA. Photographed by Edward Curtis in 1925.

the early race', the hybrid beings of the ancient Primal Time when all living beings, including humans, had not yet separated into different species (Jolly 2002; Hollmann 2003, 2005a; Guenther 2020a, 2020b).

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NEW ARCHSOC PRESIDENT AND VICE-PRESIDENT

Prof. Peter Mitchell and Dr Lita Webley

Prof. Peter Mitchell and Dr Lita Webley have been elected by the Council of the South African Archaeological Society as President and Vice-President of the Society respectively for the July 2024 to June 2026 term. They succeed Dr David Morris and Dr Antonia Malan who have served as President and Vice-President respectively for the 2022 to 2024 term.

Peter Mitchell read archaeology and anthropology as an undergraduate degree at Cambridge (1980–1983) and then moved to Oxford, where his doctorate on the significance and wider context of the late Pleistocene Robberg lithic assemblages excavated by Pat Carter at Sehonghong, Lesotho, was supervised by Ray Inskeep. He visited southern Africa for the first time in 1985, returning in 1988 to undertake the first ever excavations of Later Stone Age sites in

western Lesotho as a British Academy post-doctoral research fellow. A temporary lectureship (1990) and a post-doctoral research fellowship (1992–1993) at the University of Cape Town allowed him to conduct further fieldwork in Lesotho, notably at Sehonghong. This was followed by two further seasons at the nearby site of Likoaeng later in the 1990s. More recently, he was senior consultant on a World Bank-funded archaeological heritage project carried out in Lesotho ahead of the construction of the Metolong Dam.

Peter returned to Britain in 1993, teaching first at the University of Wales and, since 1995, at the University of Oxford, where he is Professor of African Archaeology and Tutor and Fellow in Archaeology at St Hugh's College. He combines these positions with being a Research Associate of the Rock Art Research Insti-



Prof. Peter Mitchell, ArchSoc President



Dr Lita Webley, ArchSoc Vice-President

tute at the University of the Witwatersrand. He was President of the Society of Africanist Archaeologists (SAfA) from 2004 to 2006, served for two decades on the Governing Council of the British Institute in Eastern Africa, and has been co-editor of *Azania: Archaeological Research in Africa* since 2009.

As well as publishing widely in the *South African Archaeological Bulletin* and other journals, Peter has written several books, including *African Connections: Archaeological perspectives on Africa and the wider world* (2005), *The First Africans* (2008, co-authored with Larry Barham), *The Eland's People: New perspectives in the rock art of the Maloti-Drakensberg Bushmen* (2009, co-edited with Ben Smith) and *Horse Nations: The worldwide impact of the horse on indigenous societies post-1492* (2015). *The Oxford Handbook of African Archaeology* (2013, co-edited with Paul Lane) and *African Islands: A comparative archaeology* (2022) were both awarded the SAfA Book Prize. A second edition of his synthesis of *The Archaeology of Southern Africa* was published by Cambridge University Press in June this year.

Lita Webley completed her BA (Archaeology and Classical Hebrew) and MA degrees at the University of Stellenbosch (1975–1979 and 1984) before moving to the University of Cape Town (1992) for her doctorate. For her MA degree, she undertook archaeological and ethnographic research in the Richtersveld and Leliefontein Communal Reserves in Namaqualand, focusing on Khoekhoen settlement patterns. For her doctorate she returned to Namaqualand, excavating Spoeg River cave on the coast where she found evidence of the earliest introduction of sheep into South Africa. She was employed by the Natal Museum Service (1988–1990) as an archaeologist, excavating at Rorkes Drift and other historical sites in the province.

She then accepted a post as archaeologist at the Albany Museum in Grahamstown (1990–2008), of which her last ten years were spent as assistant director and director. During this time, she served on the committees of numerous heritage organisations, including the Makana Heritage Forum, the Eastern Cape Regional Committee of the National Monuments Council and the Eastern Cape Provincial Heritage Resources Agency, as well as editing the *South African Field Archaeologist* and *Annals of the Eastern Cape Museums*. In 2008 she accepted a post at the Archaeology Contracts Office (ACO) to undertake archaeological and heritage impact assessments in the Western, Northern and Eastern Cape. During this period, she also served on various committees at Heritage Western Cape. Since 2017, she has followed her interests in assisting with contract projects and writing up her research.

Lita taught semitic languages at the University of South Africa (1979–1980) and archaeology at the University

of Stellenbosch (1981) and was a substitute lecturer at the University of Fort Hare (1984). Apart from publishing on archaeology and ethno-archaeology in various local and international journals, she has contributed chapters to the following books, namely *Wives and sisters: Changing gender relations among Khoekhoen pastoralists in Namaqualand* (1997) in *Our Gendered Past: Archaeological studies of gender in southern Africa* by L Wadley (ed.); *Women and men of the Khoekhoen of South Africa* (2000) with AB Smith in *Rethinking Pastoralism in Africa: Gender, culture and the myth of the patriarchal pastoralist* by D Hodgson (ed.); *Archaeological investigations at the battlefield* (2002) in *Rorke's Drift* by A Greaves et al.; *Hide-working among descendants of Khoekhoen pastoralists in the Northern Cape, South Africa* (2005) in *Gender and Hide Production* by L Frink and K Weedman (eds); and *People and places on the west coast since AD 1600 (2103)* with A Malan, D Halkett and T Hart in *The Archaeology of the West Coast of South Africa* by A Jerardino et al. (eds).

POPULATION GENOMICS OF WESTERN EURASIA

Genetic diversity in west Eurasian human populations was largely shaped by three major prehistoric migrations: anatomically modern hunter-gatherers occupying the area from around 45 000 before present; Neolithic farmers expanding from the Middle East from around 9 000 before present; and steppe pastoralists coming out of the Pontic Steppe around 5 000 before present. To investigate the cross-continental effects of these migrations, authors Morten E Allentoft et al. shotgun-sequenced 317 genomes – mainly from the Mesolithic and Neolithic periods – from across northern and western Eurasia. These were assigned alongside published data to obtain diploid genotypes from more than 1 600 ancient humans. Their analyses revealed a 'great divide' genomic boundary extending from the Black Sea to the Baltic. Mesolithic hunter-gatherers were highly genetically differentiated east and west of this zone and the effect of the neolithization was equally disparate.

Large-scale ancestry shifts occurred in the west as farming was introduced, including near-total replacement of hunter-gatherers in many areas, whereas no substantial ancestry shifts happened east of the zone during the same period. Similarly, relatedness decreased in the west from the Neolithic transition onwards, whereas, east of the Urals, relatedness remained high until around 4 000 before present, consistent with the persistence of

Continued on page 23

SEEING RED: OUR ANCIENT RELATIONSHIP WITH OCHRE AND THE COLOUR OF COGNITION

Irina Matuzava

Twenty-three million years ago, our distant ancestors gained trichromatic colour vision through means of a random genetic mutation. Trichromatic colour vision and trichromacy refer to the ability to perceive colour through three receptors in the eye, known as cones and are sensitive to different wavelengths of visible light. It has been assumed that primates ancestral to humans had two cones at the start of their lineage; the duplication and modification of genes coding for one of the two created another distinct, separate cone. Gaining a third cone allowed for the perception of red and other colours with long wavelengths in addition to the two pre-existing receptors for blues and greens with shorter wavelengths. Red was entirely unknown to primate species before this mutation and the ability to see red remains rare among other mammals since exceptions to mammalian dichromacy; the state of having two cones is uncommon. Some primates lost one of their cone receptors, becoming monochromats, like the nocturnal owl monkeys (genus *Aotus*) who perceive light intensity in shades of gray. Others, including the ancestors of modern apes, monkeys and humans, happened to gain a third cone.

Michael Rowe, professor emeritus of neuroscience at Ohio University, confirms that random processes were involved in the evolution of primate trichromacy in his study of the underlying neurophysiological mechanisms, and outlines the two dominant theories for the maintenance of a third cone among primates. One longstanding theory is that of enhanced fruit detection among diurnal primates. According to this theory, improved discernment of red fruits against green foliage led to a direct increase in efficiency when foraging for nutritious food. The second theory, however, suggests it was the consumption of leaves rather than fruit that more strongly influenced routine trichromacy. This 'young-leaf' hypothesis emphasises the importance of enhanced colour vision when selecting nutritious leaves over their less beneficial counterparts, especially at times when fruit is scarce

Irina Matuzava is a contributor to the Human Bridges Project under the Independent Media Institute. The project aims to increase awareness of recent research and novel scientific findings in social sciences, palaeoanthropology, archaeology, evolutionary biology and human origins.



Ochre and powder. Courtesy of Tammy Hodgskiss.

and surviving off of leaf consumption becomes critical. Rowe's findings and the 'young leaf' theory also align with the later evolution of trichromatic vision in the howler monkey, a New-World primate.

New-World primates and Old-World primates, which include humans and apes, are two major groups within the order Primates that differ in anatomical features and geographic distribution. Since their last common ancestor did not have trichromatic vision, the trait evolved in both Old and certain New-World species through convergent evolution, which occurs when similar traits evolve among distantly related species, usually due to similar environmental pressures and advantages to the trait. Further down the evolutionary timeline, rocks and minerals became the cornerstones of technological advance among hominins. Within the range of widely accessible raw materials, one pigment stands out with its broad spectrum of colour: ochre. Ochre varies in shade depending on its chemical and structural composition, appearing from light yellows and rusty browns to deep red-purple hues. Red ochre, for example, gains its colour from an abundance of iron oxide called hematite.

Known evidence for processing and crushing ochre pieces by early humans in Africa dates as far back as the Early Stone Age. In a 2022 article published by the *Journal of World Prehistory*, researchers Rimtautas Dapschauskas and his co-authors compared the frequency of ochre use over time between more than 100 African archaeological sites. They found that ochre, particularly of the hematite-rich variety, grew in

geographical distribution and frequency of use from 500 000 years ago (ya) and became part of the cultural behaviours habitual to site inhabitants as early as 160 000 ya. Over a third of the latter sites included in the study contained various forms of the material. Notable ochre finds from Early to Late Stone Age African sites include two intentionally shaped pieces of red ochre from 307 000 ya at the Olorgesailie basin in Kenya, as well as a workshop at Blombos Cave, South Africa, for processing ochre 75 000 to 100 000 ya. Several of the Blombos specimens display patterns of wear suggesting their use on hard surfaces in the same manner one would use a crayon today.

Ochre pervaded early human history, with many instances of use appearing throughout the archaeological record in accompaniment to technological/utilitarian developments and ritualistic behaviour. A few utilitarian applications of ochre include its use in hide-processing, as a skin protectant to guard against mosquitos and excessive sun exposure, and in compound adhesives for tool making. The latter is considered to be one of the best pieces of evidence for advanced cognitive abilities in early humans.

Processing ochre is not unique to *Homo sapiens* either. A 2024 study conducted by scientists Patrick Schmidt, Radu Iovita and their colleagues investigates the use of ochre-based compound adhesives for Middle Paleolithic cutting and scraping tools crafted by *Homo neanderthalensis* at Mousterian rock shelters in France. The researchers found that the adhesive's ratio of ochre to bitumen was optimal and exact. Bitumen loses adhesive properties when mixed with ochre, but the ratio used by Neanderthals creates a mass malleable enough to be formed yet sticky enough to adhere stone tools to handles. The glue's formula is presumed to be a result of experimentation and costly investments of time and labour, akin to the behaviours and thought patterns of early *Homo sapiens* in Africa.

Past ritual applications are evident through the intentional selection of ochre based on colour. Despite the prevalence of other pigments such as yellow ochre or black manganese in local landscapes, the disproportionate abundance of processed red ochre in large artifact assemblages points to a strong preference for saturated red hues. Having no obvious instrumental value and inexplicable from a utilitarian perspective, the prolonged repetition of colour-driven ochre collection exemplifies ritual behaviour.

Burial decoration was one ritual application of ochre. The deliberate burial of human remains appears in many well-established cases from the Upper Palaeolithic and Mesolithic periods throughout Europe and Asia. Burials often imply respect for the individual, and adornment of the grave or deceased individual

was sometimes used to honour the person's social status or to enhance their appearance. Lawrence Straus and his collaborators describe the burial of 'the Red Lady of El Mirón' in their 2015 *Journal of Archaeological Science* article. The 'Red Lady', found in a cave in northern Spain, gained her name from an abundance of red ochre that coats her remains in a bright red hue. Those who buried her used a form of ochre not found in local sources, suggesting it may have been collected elsewhere for special burial rites or preservative use. Another example is a discovery made at Sungir, northeast of Moscow in Russia, where a man and two young children were buried 27 000 years ago. Their grave contained objects including mammoth ivory spears, a variety of ornamental jewellery and thousands of ivory beads. The burial was covered entirely in red ochre.

Researchers have suggested that the initial catalyst for ochre use may have been its colourful and aesthetic appeal, only later to be followed by practical applications. It is therefore no surprise that ochre is one of the earliest natural pigments used for artistic expression, including bodily adornment and cave paintings. Two of the oldest known cave paintings are hand stencils in the Cave of Maltravieso of west-central Spain and painted stalactites in the Ardales cave of northern Spain. The red pigment decorating these caves has been dated through uranium-thorium testing methods to at least 66 700 and 65 500 years ago respectively. Today, artists primarily use a synthetic version of red ochre invented in the 18th century. Still, they carry on a very ancient legacy of using this pigment to create meaningful symbols in meaningful places.

Red ochre has been heavily featured by people across time and continents compared to its undersaturated counterparts, and the colour red continues to hold special significance on a global scale. In many East Asian cultures, red represents good fortune and is featured heavily during celebrations. In some Native American communities, red denotes courage and spiritual strength, while other groups associate life, vigour, passion, revolution and other powerful concepts with the colour. The power ascribed to red is also heavily reflected in language; different cultures group the visible light spectrum into categories of different sizes and names. However, an overwhelming majority have a designated word for red no matter how they differentiate between the rest of the rainbow.

Although past interpretations of ochre have been complicated by its duality in symbolic and practical uses, special attention toward the mineral grows alongside the number of excavated finds. Current research initiatives increasingly recognise the value of the material as a reflection and potential driving force of cognitive and cultural evolution in early humans.

THE DESTRUCTION OF CULTURAL HERITAGE AS A WEAPON OF WAR AND GENOCIDE

Rosabelle Boswell and Ismail Lagardien

Mahatma Gandhi famously said: 'What difference does it make to the dead, the orphans and the homeless, whether the mad destruction is wrought under the name of totalitarianism or in the holy name of liberty or democracy?'

In saying this, he compelled the world to see war and conflict from the perspective of those least able to defend themselves. War and conflict, however, have impacts beyond senseless killings. Looking over our shoulder to war over the last century, the destruction of Dresden's Frauenkirche in February 1945, what we have come to understand as an act of bravado by the Allies during WW2, was perceived by eyewitnesses as 'the traumatic signature of a completely wanton attack on one of Europe's greatest cultural treasure troves'. The writer Kurt Vonnegut quite eloquently captured the destruction of Dresden in his book *Slaughterhouse Five*.

At the end of WW2, soldiers from the US (and western Europe) looted Germany's cultural artefacts. As recently as 2021, one of the world's largest collections of German art, notably Nazi propaganda, was found in a warehouse at Fort Belvoir in northern Virginia. Soviet soldiers took 'millions' of cultural artefacts from the collapsed German state after the war. Not that it needed reminding, but the Yves Saint Laurent Auction Controversy (where art works that had been looted during the Opium Wars were put on sale) demonstrated, in our times, the persistence of war booty in the world.

Destruction of cultural heritage is, then, not always physical 'destruction' but includes the raiding, looting and carrying away of 'war booty'. The United Nations Educational, Scientific and Cultural Organisation (Unesco) defines cultural property as 'movable and immovable property of great importance'. In a statement of principle, a former director-general of Unesco, Irina Bokova, has said: 'Heritage, before being a building, is a consciousness and a responsibility. When violent extremism attacks culture and cultural diversity, it is also necessary to respond with culture, education, knowledge, to explain the meaning of sites and share the message of tolerance, openness and humanity that heritage carries.'

Notable heritage sites destroyed by organised violence (war), include Aleppo and Palmyra in Syria; religious sites in Timbuktu in Mali; the Buddhas of Bamiyan in Afghanistan; China's Old Summer Palace in Beijing; the former Prefectural Industrial Promotion

Hall that was destroyed by the US atomic bomb in Hiroshima; and Jonah's Tomb in Iraq. This is not an exhaustive list, but it is consistent with the belief that destruction of a society's cultural heritage is part of war. The destruction of tangible cultural heritage, however, can, and often does include destruction of ritual practice, beliefs and symbolism. These forms of destruction, while not necessarily involving the physical death of individuals, can herald the psychosocial and cultural 'death' of communities.

It is early to assess or measure with any accuracy what damage to cultural heritage sites will emerge from the present Palestine-Israel conflict. In past conflicts, sites of cultural value have been targeted. However, what is clear is that the ongoing conflict does impact on peoples' ability to safely practise and express their intangible cultural heritage and thereby affects their human right to culture.

The United Nations recognises the impact of war on cultural heritage. It recently reported that within the first three or four months of the Ukraine war, 152 cultural sites in Ukraine were partially or totally destroyed, including 70 religious buildings, 30 historical buildings, 18 cultural centres, 15 monuments, 12 museums and seven libraries. The organisation swiftly instituted measures to restore some of these heritages, even in the face of ongoing conflict.

'Peace in the minds of men'

The purpose of Unesco, founded at the end of WW2, is to establish 'peace in the minds of men'. This is to be achieved by identifying, nominating and conserving cultural diversity expressed in culturally valuable sites, monuments and artefacts, as well as intangible cultural expressions of universal value. Unesco has conserved cultural heritage (inter alia) via its World Heritage Convention (1972) and the Convention for the Safeguarding of the Intangible Cultural Heritage (2003). The latter, often discussed as the ICH Convention, is for the safeguarding of globally valued ritual practices, beliefs, symbolism, songs and oratory.

During war, cultural artefacts and sites of cultural and natural value are often destroyed. People are also scattered from their socially meaningful places. The cultural relations that sustain social cohesion and the integrity of tangible heritage sites may be destroyed. A significant mandate of Unesco is to safeguard and restore cultural heritage during and after war. This is

a difficult task because of geopolitical alliances and the fact that humanity has a diverse and often violent heritage of war.

There are wars of honour and codes of honour in war. In Sun Tzu's *Art of War*, for instance, warring states are advised to attack cities and civilians only as a last resort. But globally, wars remain both violent and dishonourable. Colonial wars divide communities and reduce the dignity of human beings. Remote, dirty wars attempt to hide the true human cost of conflict. Civil wars often lead to gross human-rights violations against women and children. Given the UN concern for human rights, it is important that Unesco recognises and responds to what we call abhorrent cultural heritages. War and conflict are abhorrent cultural heritages.

Abhorrent cultural heritage

If the UN and Unesco are true to their mandates, they should adopt three immediate global actions. First, the UN should publicly condemn a conflict as abhorrent, and Unesco should declare war and conflict forms of abhorrent cultural heritage. War abhors and erodes the protection of human rights, and it leads to the destruction of cultural heritage.

War is abhorrent because it also erases the complexity and dynamism of cultural heritage. It erases the multiplicity of human existence, shared cultural spaces and meaning. It erases the possibility of crossing cultural boundaries and of learning from others who appear different from us.

Anthedon, the first seaport of Gaza (now on Unesco's Tentative List of heritages to be preserved) is one of the world's most ancient coastal sites, but it is also one

of the world's most diversely constituted sites. It, and nearby areas, hold multiple spiritual, archaeological and political histories. Cultural heritage signification in Anthedon has changed over time. Thus, war is not just about the assertion of symbolic power when political regimes change, nor is it merely about the looting of artefacts of value – it can erase a history of diversity, including histories of collaboration and cultural sharing.

At its most extreme, war is abhorrent because it can lead to mass murder. War-led genocide was apparent in WW2, in the Nigerian Civil War (1967), Somali Civil War (1991), Bosnian War (1992–1995) and in Rwanda (1994). These wars also led to the gross violation of women and children's rights.

It is impressive that more than 1 000 heritage monuments and sites are inscribed on Unesco's World Heritage List and that these cultural heritages showcase the creativity and beneficence of humankind. However, the world needs to acknowledge that it has heritages that are also deeply problematic, morally ambiguous and destructive. By recognising the existence of Abhorrent Cultural Heritages and what needs to be done to condemn and limit their effects, Unesco will play a more critical and valuable role in advancing a world where peace truly reigns in the minds of all.

Those who now witness war and its atrocities, experience it vicariously. It is much worse, in our view, to be at war and to experience its abhorrence first hand. Unesco needs more courage. Courage is rare. But as Edmund Burke reminds us: 'The only thing necessary for the triumph of evil is that good men do nothing.'

Daily Maverick/Heritage Portal, 19 Nov 2023 [edited]

ARCHAEOLOGY IN BRIEF

Palaeontologists have discovered a previously unknown small, armoured dinosaur in Argentina, a creature that likely walked upright on its back legs about 100 million years ago. Described in *Scientific Reports*, the Cretaceous Period dinosaur, named *Jakapil kaniukura*, was protected with rows of bony disk-shaped armour along its neck, back and tail, had a length of about 1,5 m and weighed 4 kg to 7 kg. Its fossilised remains – a partial skeleton and 15 tooth fragments – were dug up in Patagonia's La Buitrera paleontological zone. *Jakapil* resembles a primitive form of Thyreophoran that lived much earlier, making it a surprise that it dates to the Cretaceous. The Thyreophoran dinosaur group includes the likes of *Stegosaurus* and the tank-like *Ankylosaurus*.

Daily Maverick, 12/08/2022

Interpretative centre honours the Khomani. A R3,5 million Interpretative Centre and Narrative Development Project was opened at the Kgalagadi Transfrontier Park in the Kalahari last year in honour of the ancient culture of the Khomani San. According to the Department of Tourism, the centre provides a special stop at Twee Rivieren Rest Camp with an exhibition that includes a collection of narratives and the storyline of the local Komani and Mier communities.

Apart from its rich cultural heritage, the World Heritage Site has two important biomes with diverse fauna, which attracts visitors from all over the world to the Red Dune Kalahari Region.

Sunday Tribune, 24 July 2023

CONTEXT AND REALISATION OF THE FIRST STEENBRAS DAM A CENTURY AGO

Arne Singels and Kevin Wall

The first Steenbras Dam, completed in 1921, has an important place as the first part of a scheme that was taken further by Steenbras II (1928) and Steenbras III (1954). In total these dams provide water storage for Cape Town of an order of magnitude that would surely have delighted the designers of a century ago. As Steenbras I is now over a hundred years old, it brings it into the realm of historical archaeology.

On 25 March 2022 a plaque was unveiled at the Steenbras Dam in the Western Cape to celebrate the centenary of the first major dam that was built by the City of Cape Town to meet the growing water demands in the early 1900s. During the 19th century, Cape Town grew beyond the confines of the initial area of settlement between Table Mountain and Table Bay. While municipal government, with gradually increasing powers, was legislated during the second half of the century, each of the small centres that grew around Cape Town's main transport junctions aspired to govern themselves and provide their own engineering infrastructure. Thus, by the turn of the century, there were 10 municipalities in the Cape Peninsula.

New sources of water ran out almost as quickly as they were made available, and restrictions were imposed. From 1904 onwards, Cape Town was on short supply during the summer months, with water being turned off for up to 15 hours a day. Plenty of water was available, but at a distance, from the mountains

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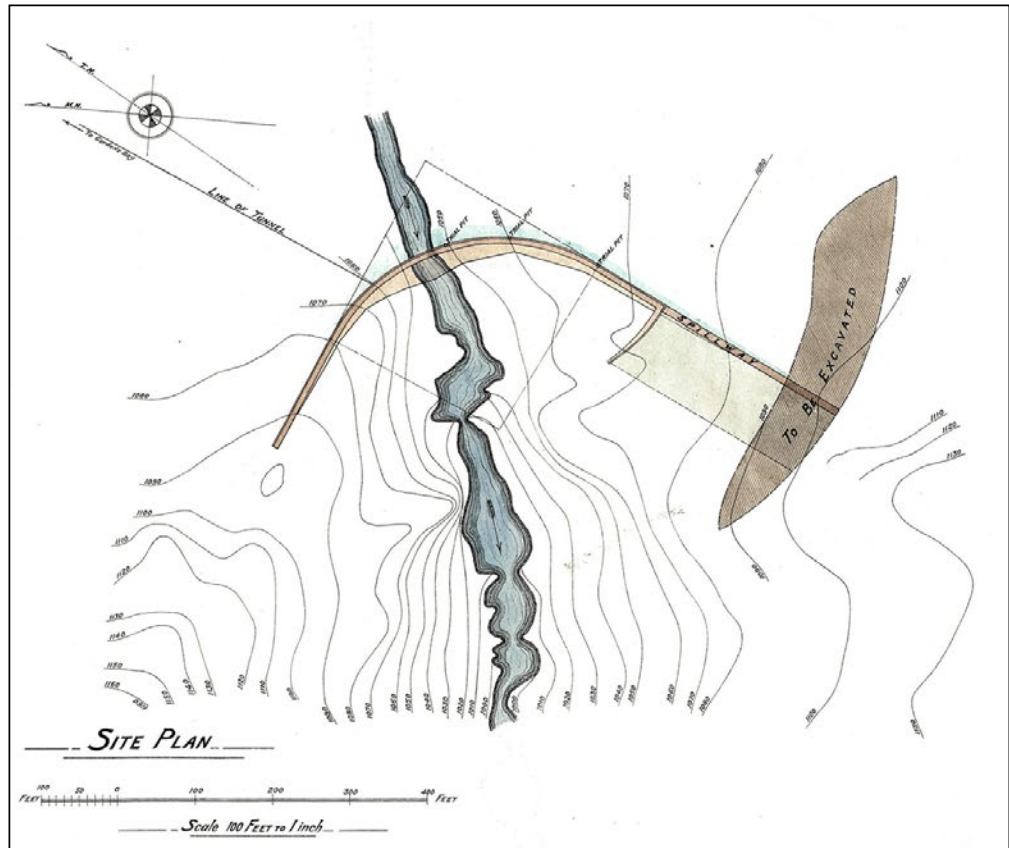


Fig. 1: Layout plan of Steenbras I, dated 22 March 1908 (City of Cape Town)

across the Cape Flats over 60 km away. To build the necessary dam and pipeline would require far greater resources than any one of the municipalities possessed. An ordinance was thus brought into operation in September 1913 amalgamating all the Peninsula municipalities other than Wynberg and Simon's Town, plus extensive additional areas (Province of the Cape of Good Hope 1913). Of all the problems the new municipality was expected to resolve, the most urgent was undoubtedly water supply.

Ten years before, a panel of engineers had reported on several possible dam sites. Among these were Steenbras, the adjacent catchments of Olifantshoek and Wemmershoek (this site was used for the next big dam after Steenbras, in the 1950s), Twenty-Four Rivers (eventually tapped in the early 1970s), Palmiet (tapped in the 1980s) and Berg River Hoek (a site in this vicinity was dammed in 2009). With the outbreak of World War I, the city engineer, in office for only a year, resigned and returned to England, to be succeeded by DE Lloyd-Davies. Water demand

grew apace, boosted by the need to supply the many convoys calling at the Cape.

In June 1915 the city appointed a Board of Engineers to examine and report upon the various water sources available within an 80 km radius of the city. The city council was initially undecided on whether to build at Wemmershoek or Steenbras, but its mind was made up by the board's final report of December 1916 that recommended the latter. Steenbras was closer to Cape Town but perhaps the most compelling reason was that 'The Board considered the Wemmershoek scheme heavily handicapped by the protective provisions of the Southern Suburbs of Cape Town Water Supply Act, 1907', i.e. for the riparian owners along the Berg River.

Council instructed Lloyd-Davies 'to undertake the design and execution of the scheme with all possible dispatch', acquired the portions of the catchment area it did not already own, and obtained the water rights thereto. Afforestation of the upper reaches of the catchment with pine trees was commenced in 1918.

Planning of Steenbras

A critical decision to be taken was how big the dam should be. One option was to build a smaller dam for early completion to be able to at least partially address the very serious water shortage as soon as possible. The option of a bigger dam would take longer, by which time the water shortage would have become much worse, with more severe restrictions, although the total construction cost might be less in the long run. The anticipated wartime shortages of key materials (especially anything in cast iron or steel, all of which needed to be imported) would certainly have supported the argument to 'build a smaller dam and build it now'. But was this practical and economical? Could a larger dam be built soon after without 'wasting' the work put into construction of the initial dam?

The catchment is fed by two rivers, namely Steenbras and Kogelberg. The dam site would be at a narrow neck through which the main stream flowed. An 18 m weir constructed there in 1915 provided a projection of a daily flow of 113 Mℓ for 'ordinary dry years'. To put this in context, a 1901 report stated that Cape Town's two Table Mountain dams could only supply 14 Mℓ per day at most. Meanwhile, a 23 Mℓ/d scheme would probably satisfy the demand for 10 years and such a scheme would be able to be completed in three years, a much shorter period than required by a dam to exploit the site's 113 Mℓ/d potential.

The smaller dam option was approved in May 1917. In addition to the 2 730 Mℓ storage dam needed, an 823 m long tunnel through the ridge on the reservoir's western flank, to emerge above Gordon's Bay, and a 760 mm cast iron pipeline to the existing Molteno Reservoir and Lower Service Reservoirs on the

slopes of Table Mountain would be built. The city engineer would oversee the design and construction of the works, while construction of the dam and tunnel would be put out to tender. Another contract was for the supply and delivery of the cast iron pipes, which would be laid by council staff. Within a month of authorisation by the Enrolled Voters of a loan of £850 000 for carrying out the scheme, the contract for the supply and delivery of pipes was signed. The contracts for the dam and the tunnel were signed in November 1917.



Fig. 2: General view of the wall under construction (City of Cape Town 1921)

Dam design and construction

The team now needed to determine which location and design would enable a dam to be built that could be incorporated into a larger scheme when it became necessary. A dam design with a sufficient foundation to permit its height to be increased to that ultimately required for the increased storage was selected. The dam designers chose an arched structure to be founded in the Table Mountain Sandstone series. Some key dimensions include:

- Greatest depth of trench: 6 m
- Length of dam wall: 274 m
- Maximum wall height: 19 m
- Maximum wall width: 12 m tapering to 2,7 m
- Spillway length: 74 m

Following its conveyance through an 823 m tunnel on the first part of its journey to Cape Town, water would pass through two cast iron pipes to two break-pressure tanks. From the lower tank, a cast iron pipeline would run to the Lower Service Reservoirs above the Cape Town city centre. On its journey, the 63 km long main would cross the Lourens, Eerste and Liesbeek Rivers. It could deliver up to 30,9 Mℓ/d to the Lower Service Reservoirs, all by gravity. Another 15,5 Mℓ/d could be delivered by a further section of pipeline directly to the higher Molteno Reservoir.

In December 1917, the £49 750 tender for the dam construction, with a projected completion date of 24 months, was awarded. Another company was awarded the tunnel tender for £14 724, with a completion date of 18 months.

The dam was built with cyclopean masonry, with plumbs embedded in 6:1 concrete and faced on both sides with concrete blocks precast on site. The interlocking facing blocks were placed in an integrated pattern. During construction the river was conveyed over the dam wall trench by means of a large flume and at the riverbed level a 2.4 m gap was left through the base so that an average flood could pass through.

The railway line from Cape Town over the steep Sir Lowry's Pass to Caledon had been completed just a few years before. A siding was constructed from whence plant and materials could be transported to the dam site about 12 km away. By mid-1918, excavation for the foundation had been started and a quarry with good quality of stone had been opened. However, a year later construction was falling behind schedule and by mid-1919 only two-thirds of the trench for the foundation had been completed and the casting of the foundation had only just started.

The effect of the war was still being felt in terms of delays to the delivery of pipes and other cast iron elements from the UK. Moreover, the international influenza pandemic had reached South Africa in September 1918, giving rise to extremely high percentages of workforce absenteeism. By the time the worst of it had passed, more than a year later, 'about 60 per cent of the South African population [had] contracted the virus ... According to Howard Phillips, the renowned South African historian of epidemics ... the estimated overall mortality toll of 4,4 per cent made it the fourth worst-hit state in the world'.

Council decided to proceed with direct labour. In September 1919 the contract with the construction contractor was cancelled. At that stage, 10 312 m³ of masonry had been placed, with 4 980 m³ still to be done. By October 1920, progress was so far

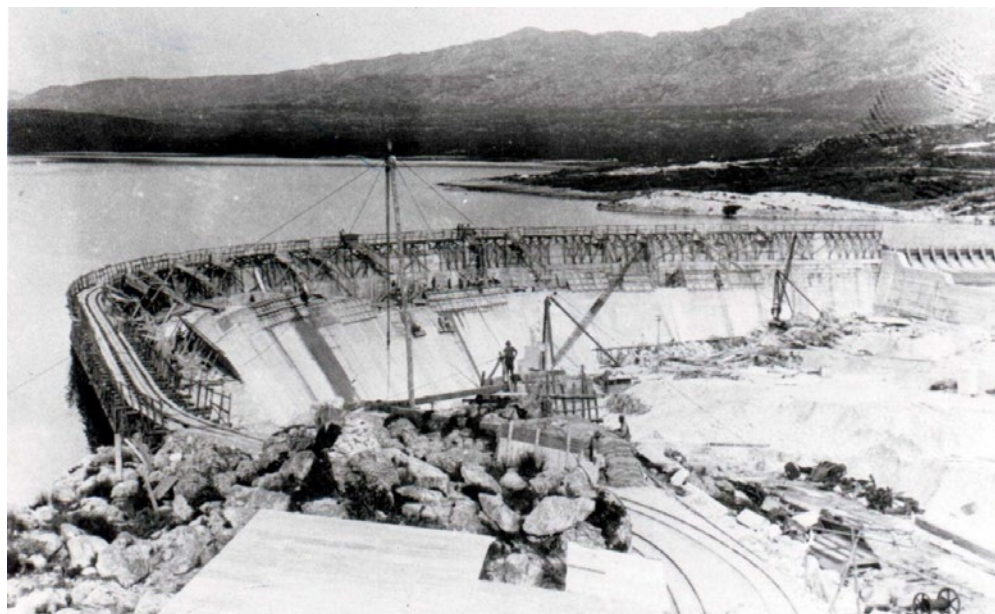


Fig. 3: Progress with construction of Steenbras II, directly on top of the wall of Steenbras I, in 1926 (City of Cape Town)

advanced that the sluice gates could be closed and impoundment could begin. The wall itself was completed in April 1921.

Tunnel and pipeline construction

Tunnelling had begun from both sides but soon after the start on the open cut, 'indifferent' ground was discovered and the open cut section from the outlet pipe at the dam to the tunnel entrance was extended by 30 m. By June 1918, the open cut was nearly complete. However, a year later council decided that the tunnel contractor had made insufficient progress and took over this work in September 1919. After six months of hard work and by gradual approach from both sides with substantial bulkheads, all fissures were closed. About 460 m of the tunnel was lined with heavily reinforced concrete. For the remaining hard rock sections a concrete floor was provided. The work was completed in January 1921.

By 1920 a total of 28 750 t or 14 834 pipes had been received at Cape Town docks, with 4 250 pipes still to arrive. The first pipe was laid in February 1919, and by June 1920 three-quarters of the line had been laid. The highest number of pipes laid by a single gang on one day was 53.

Commissioning

Given the difficulties the project encountered, including wartime disruptions to material supply, the influenza pandemic and a labour strike in 1919, it was remarkable that the project was able to supply water to Cape Town as early as January 1921, just three years after commencement of construction. Prices had escalated enormously during the war, and the cost of the scheme was 50 per cent more than

what had been estimated in 1916. Shortly before final completion, the total cost of the Steenbras Water Scheme was stated to be about £1 222 000, comprising £350 000 for the reservoir, tunnel, land and water rights, and £872 000 for the pipeline.

On 9 March 1921, in a ceremony at Molteno Reservoir, where the Steenbras pipeline terminated, His Royal Highness Prince Arthur of Connaught, the Governor-General of the Union of South Africa, formally inaugurated the first Steenbras Scheme. At the time of the inauguration, which was at the tail end of the dry season, 1 800 Ml of water was already stored. Once the rainy season began, the reservoir filled up rapidly. First overflow occurred in June 1921 and, in a single day, spilled almost the equivalent of full capacity.

Despite it being the largest water project undertaken by any South African municipality, the Steenbras Scheme only brought short-term relief from water restrictions. By 1923 the average daily water consumption of Cape Town had risen to 41 Ml per day.

Water restrictions were inevitable and two years later water was again cut off from 16:00 to 6:00 during the summer months. However, it was some consolation to know that, if the larger Steenbras alternative had been embarked on, the water restrictions would have been far more severe.

As intended a dozen years before, the much larger dam wall of Steenbras II was completed in 1928. It was founded, as planned, on exposed bedrock immediately downstream of the first dam, while retaining the dam of Steenbras I as the inner face and thus not 'wasting' the work on the initial dam. Also as planned, use of the reservoir was not impeded during construction of Steenbras II.

Acknowledgements

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WORLD ARCHAEOLOGY

Origins of enigmatic Xinxiang mummies

Since their discovery, the ancestry of hundreds of mummified bodies buried in boats in an inhospitable desert region of north-west China has puzzled and divided archaeologists. Found in the Tarim Basin in Xinjiang mostly in the 1990s, the mummies' bodies and clothes are strikingly intact despite being up to 4 000 years old. Naturally preserved by the dry desert air, their facial features and hair colour can clearly be seen. Their western looks, felted and woven wool clothing and the cheese, wheat and millet found in their graves suggested they were long-distance herders from the west Asia steppe or migrating farmers from the mountains and desert oases of central Asia.

However, a new study by Chinese, European and American researchers that analysed the DNA of 13 mummies has painted a different picture. The analysis, published in *Nature*, suggests that the remains did not belong to newcomers but a local group descended from an ancient Ice Age Asian population. 'Beyond being extraordinarily preserved, they were found in a highly unusual context and they exhibit diverse and far-flung cultural elements,' said anthropology professor Christina Warinner from Harvard University and group leader of microbiome sciences at the Max Planck Institute for Evolutionary Anthropology. 'We found strong evidence that they represent a highly genetically isolated local population. In contrast to this, they seem to have openly embraced new

ideas and technologies from their herder and farmer neighbours, while also developing unique cultural elements shared by no other groups,' she said.

The researchers looked at the genetic information from the oldest Tarim Basin mummies -- dating from 3 700 to 4 100 years old -- together with genomes sequenced from the remains of five people from the Dzungarian Basin farther north in China's Xinjiang Uyghur Autonomous Region. Dating back to between 4 800 and 5 000 years, these are the oldest human remains found in the region. The research found that the Tarim Basin mummies showed no sign of admixture with other groups. The mummies were direct descendants of a group that was once widespread during the Ice Age but had largely disappeared by around 10 000 years ago.

Called Ancient North Eurasians, traces of this hunter-gatherer population survive only fractionally in the genomes of present-day populations, with indigenous people in Siberia and the Americas having the highest known proportions. Ancient genetic samples from this region are still relatively rare and it is possible that other genetic influences from the Himalayas or Tibet are found. Although earlier work has shown the mummies lived on the shores of an oasis in the desert, it is still unclear why they were buried in boats covered in cattle hides with oars at their head, a rare practice not seen elsewhere in the region and perhaps best associated with Vikings. CNN

COMMENTS ON ROCK ENGRAVINGS FEATURING 'HOMESTEADS', ANTELOPE AND HUMAN IMAGERY

Francis Thackeray

A pecked rock engraving (Fig. 1) from Mahakane near Kuruman in the Northern Cape province (Maggs 1995; his Fig. 1A) is an example of Iron Age art that, like other 'cartographic' engravings in southern Africa (Maggs, 1998), appears to represent a homestead as if seen from above (a 'bird's eye view'). Similarly, many examples of homesteads are represented in Bokoni engravings associated with stone walling in Mpumalanga (Birin et al. 2021; Delius et al. 2011; Maggs 2007; Serfontein 2013). Fig. 2 is an example of a Bokoni engraving of homesteads from the site of Boomplaas based on a copy by Brigid Ward and Tim Maggs on the cover of the June 2000 issue of the *South African Archaeological Bulletin*, 55(171).

In this note, I comment on 'homesteads' and rare imagery (human and antelope) adjacent to them at Mahakane and Boomplaas. Attempts have been made to address questions stimulated by an examination. Answers are simply not always available, hence the need to formulate hypotheses. There are as many as ten of them here.

The Mahakane engraving

Below the Mahakane 'homestead' engraving a human figure appears to be standing on a circle. Although it seems implausible, I propose that this represents (at least symbolically) a person standing on a wheel of the kind used for ox wagons by European travellers postdating 1800 (my Hypothesis H1). In particular, I suggest (Hypothesis H2) that the concept of standing on a wheel is analogous to a (symbolic) image of a person 'standing precariously on top of a ladder' (Thackeray 1990; quoting from a comment by AJH Goodwin in 1948) in a rock-art painting at Knuyswagendrift in the southern Cape that appears on the cover of the *South African Archaeological Bulletin*, 3(10), June 1948. The latter is analogous to a trance-related painting of an individual standing near the top of a ladder at Junction Shelter in KwaZulu-Natal (Thackeray 1990; 1994; 2021). In all three cases I propose (Hypothesis H3) that these are metaphors for experiences during which a person (not necessarily a shaman) is unstable (vertiginous) or giddy in a state of trance.

Boomplaas engravings

Tim Maggs and Brigid Ward noted that at Boomplaas



Fig. 1: Pecked geometric rock engraving from Mahakane in the Kuruman area, Northern Cape, interpreted by Maggs (1995; his Fig. 1A) as homesteads as seen from above. A human figure appears to be standing (at least symbolically) on a circular object, potentially a wheel (Hypothesis H1).

two (rare) bovids are engraved adjacent to engravings of Bokoni homesteads (Figs 2 and 3). The animals are 'finely pecked and have details (legs, penises, horns and ears) in fine line engraving. Evidently late, coarser pecking is present as an apparent attempt to form dewlaps on these two animals'. They go on to refer to a 'possibility that they may even have been done, not by agriculturists but by residual Later Stone Age hunter-gatherers'. I regard their latter statement as an indication of interaction and would like to propose an alternative interpretation of a 'dewlap' existing on one of the two animals (B1 in Fig. 2) who has long curved horns like those of a roan (*Hippotragus equinus*) rather than an eland (*Taurotragus oryx*). In particular, I question whether its long 'dewlap', extending down to the base of the front legs, might instead represent blood exuding from the neck of a wounded/dying roan (Hypothesis H4). If correct, it could relate in some way to beliefs of the kind associated with wounded roan and trance (Thackeray 2005), supplementing the interpretation of rock paintings of dying eland in the context of trance-related beliefs (Lewis-Williams, 1981).

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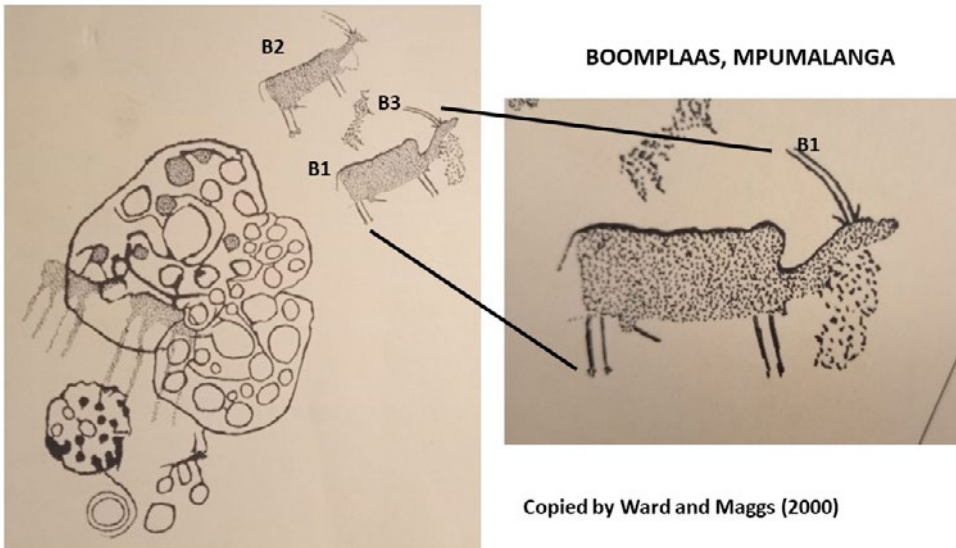


Fig. 2: Engravings of Bokoni homesteads as well as two rare antelope at Boomplaas, Mpumalanga, copied by Brigid Ward and Tim Maggs; cover page of the June 2000 issue of the South African Archaeological Bulletin, 55(171)

I propose Hypothesis H5 that the B1 antelope is related indirectly, if not directly, to the death of a roan in the context of an 'Empathetic Ritual' of Type 1 (ERT 1) in which a representation of an animal is symbolically wounded (Thackeray 2023).

B2 is an antelope with relatively short, thin and straight front legs (Figs 2 and 3). It brings to mind a so-called 'buck-jumper' at Logageng (Northern Cape province) who was photographed in 1934, document-

(Thackeray and Le Quellec 2007). Thackeray (2023) has interpreted both the 'buck-jumper' and the ORP 1 therianthrope in terms of an 'ERT 2 type of ritual' in which a person takes on the form of an animal (eg roan, eland or rhebok) and is symbolically wounded. I propose Hypothesis H6, that B2 is analogous to the buck-jumper and ORP 1.

As noted above, the legs, horns and ears of B1 and B2 are finely incised, but the 'blood' exuding from the

ing a person bending forward under the skin of a roan antelope with two straight sticks to represent front legs (Figs 3 and 4) and with stripes painted on the skin as if to represent wounds (Thackeray 2005; 2023). The 'buck-jumper' itself is comparable to an iconic therianthrope (Fig. 4) at Melikane in Lesotho (Thackeray 2005; 2019; 2023), here designated as ORP 1. It was recognised by Lewis-Williams (1981) as having associations with trance, and also recognised as having 'symbolic wounds'

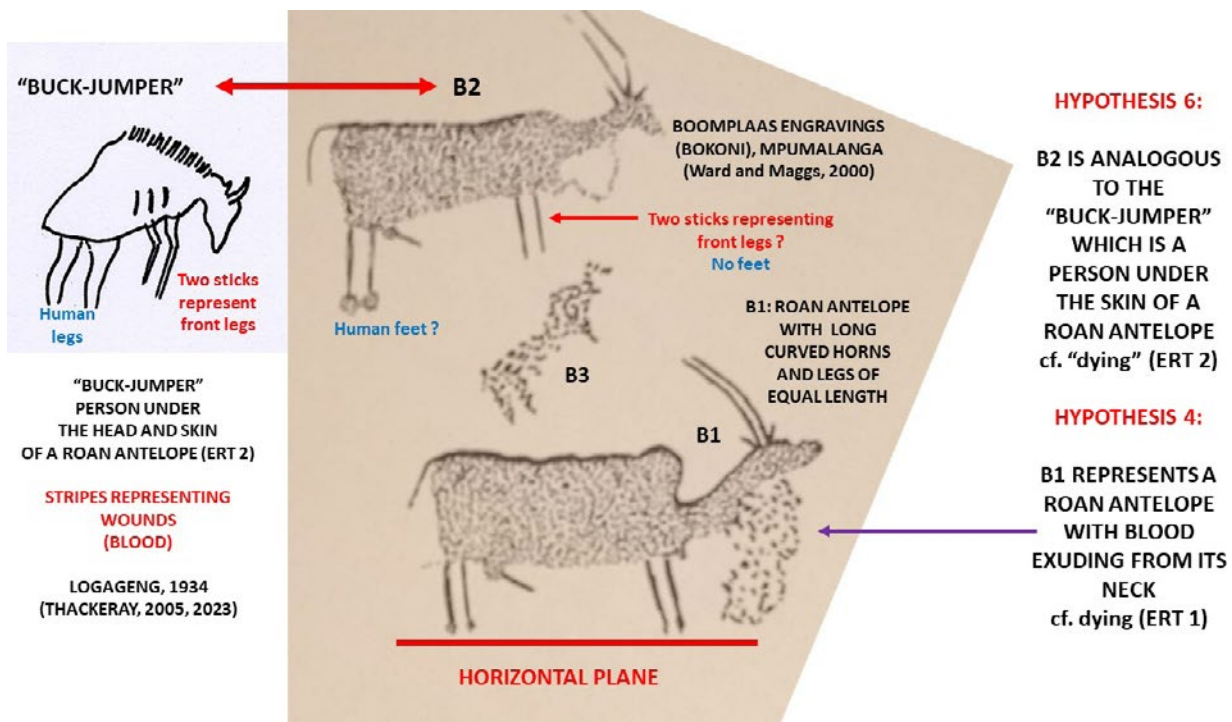


Fig. 3: Boomplaas engraving of antelope B1, here identified as a wounded/dying roan antelope with blood exuding from the neck, cf. an ERT 1 ritual. Antelope B2 is compared to a 'buck-jumper'; both may relate to a person taking on the form of an antelope, using sticks to represent front legs, cf. an ERT 2 ritual (Thackeray 2023).

neck of B1 has been pecked coarsely (cf. symbolic wounding?). Clearly the art is the product of more than one individual working at different times.

Conclusions

The Mahakane engraving (Fig. 1) apparently shows not only a human figure teetering on top of a 'wheel', but also a geometric 'homestead' (Maggs 1995; his Fig. 1A). I propose Hypothesis H7 that the latter doubles as a representation of a trance-related entoptic of the kind listed as B1 by Lewis-Williams and Dowson (1988; their Fig. 1). Likewise, it is proposed that geometric Boomplaas 'homesteads' (in particular those represented in Fig. 2) also double as trance-related entoptics (Hypothesis H8). One can hypothesise (H9) that geometric imagery in such cases was at least *inspired* in part by the perception of homesteads as if seen from above.

In the context of Figs 2 and 3, I am suggesting that the fine-lined roan (B1) was 'wounded' symbolically by an artist who used coarse pecking to depict blood below the neck (Fig. 2), reminiscent of an ERT 1 type of ritual (Thackeray 2023). It should not be assumed that 'symbolic wounding' was confined to the San. In the context of interaction, it is suggested that this concept was adopted by Bantu-speaking agropastoralists who used a pecking technique, whereas fine line engravings were primarily the product of San artists (Hypothesis H10). The following is also suggested: That the B2 'antelope' (incised, cf. San artwork) represents a hunter taking on the form of an antelope, with sticks to represent forelimbs. Further, it may relate to an ERT 2 type of ritual analogous to the 'buck-jumper', as well as the ORP1 therianthrope (Thackeray 2023).

The ten hypotheses presented in this study serve to indicate that images of 'homesteads', geometrics, animals and people may be interpreted in complex ways as per the examples given of the Mahakane and Boomplaas engravings.

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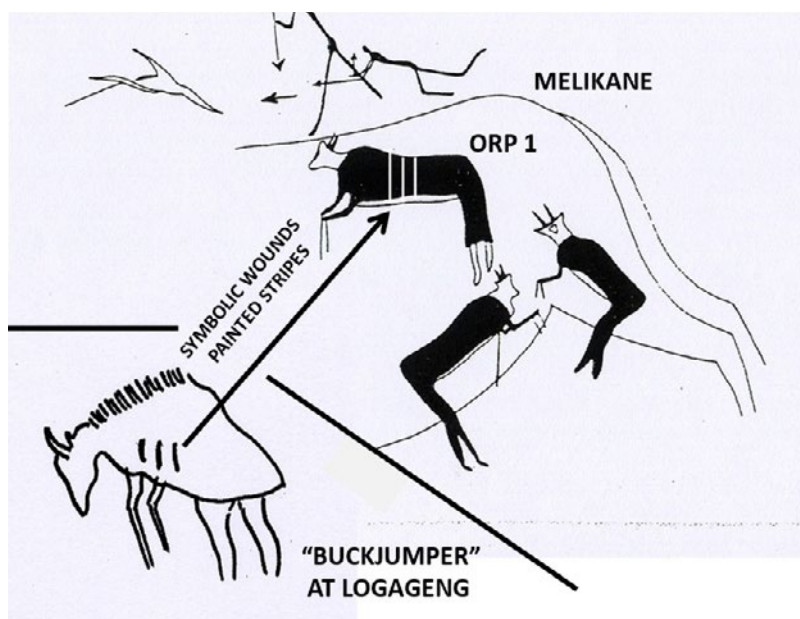


Fig. 4: Therianthrope ORP 1 at Melikane, Lesotho, with symbolic wounds, compared to the 'buck-jumper' from Logageng, Northern Cape Province. Both are associated with symbolic wounds related to ERT 2 rituals (Thackeray 2023).

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DIGITISATION OF A PETROGLYPH SITE BOASTING UNIQUENESS AND DIVERSITY

Lynette Boardman, Theuns de Klerk, At Lamprecht and Charl Yates

South Africa has a diverse collection of rock art sites featuring both pictograms and petroglyphs scattered across vast areas of the country. Petroglyphs are predominantly found in the central regions such as the south-western Free State, the Northern Cape and the south-western parts of the North West province, typically in open fields at or near low hills. Some of the most beautiful petroglyphs are situated in the northern Free State and the southern and western parts of the North West province.



Fig. 1: Depiction of a rhinoceros at the site near Klerksdorp. Petroglyph number B11.3.

Research on the petroglyphs in the North West province has been widely published since the 1900s by renowned researchers such as Van Riet Lowe (1937), the artist Batiss (1948), Mason (1962), Dowson (1992), Ouzman (2001) and Hollmann (2007). A growing interest in rock art led to some rocks containing petroglyphs being taken from their natural environment either for private ownership or to be relocated to museums in South Africa and abroad. Documented relocation efforts suggest that Europe has been a popular destination for these artifacts (Henry 2007).

Unfortunately, removal often resulted in damage to or the complete destruction of petroglyphs. Moreover, the artifacts face ongoing threats from both anthropogenic factors, such as vandalism and mining operations (eg at Gestoptefontein and Redan), and environmental conditions, including the freeze-thaw cycle that can cause rocks to crack. The digital documentation of petroglyphs helps to preserve them

in another medium, but has rarely been undertaken in South Africa for various reasons, the foremost being the challenging terrain where the petroglyphs are located that makes the work logistically difficult and financially demanding.

Despite these challenges, Lynette Boardman has identified a provincial heritage site near Klerksdorp in the North West province as the case study for her dissertation on digitising petroglyphs (Boardman 2022). The unique features and diversity of the petroglyphs at the site made it an ideal study area. The site boasts hundreds of petroglyphs created by the indigenous Khoe-San who inhabited or travelled through the region from a few thousand years ago to a few hundred years before the present. These artworks include many depictions of animals such as antelopes, baboons, birds, lions, elephants, zebras, ostriches, leopards, hippos, etc. (Ouzman 2001).

Notably, the site contains numerous detailed petroglyphs of human figures, which is quite unique for Khoe-San petroglyph sites. In addition to the ancient petroglyphs, more recent visitors to the site have left their marks, mainly in the form of dates from 1880 to 1996 and names or initials. The visits to and reports on the site by many local and foreign researchers and rock art enthusiasts have resulted in depictions like the beautifully engraved rhinoceros shown in Fig. 1 being featured in several publications

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Charl Yates is an independent researcher.



Fig. 2: Photographing the petroglyphs from various angles

(Orford 1934; Van Riet Lowe 1941; Batiss 1948; Mason 1962; Dowson 1992; Ouzman 2001). Some of the site's petroglyphs are even showcased on the website of the British Museum in London (British Museum 2013).

Boardman's research, conducted from 2019 to 2021, focused on developing and testing a workflow for digitally capturing petroglyphs within their spatial setting, followed by enhancement and dissemination



Fig. 3: Rock I23, depicting an ostrich and human figure

of the digitised images. These capturing and enhancement objectives were achieved by using remote sensing techniques and cost-efficient software technology (Boardman and De Klerk 2022). The research served as a pilot project laying the groundwork for the further development of methods for capturing and studying of the site and its petroglyphs.

Inspired by Boardman's findings, a Petroglyph Research Group (PRG) was established in 2022 by academics at North-West University who share an interest in both the artistic brilliance portrayed in ancient Khoe-San petroglyphs and the petroglyphs research value across various disciplines. The PRG's aim is to utilise specialised equipment and expertise from fields such as geographic information systems (GIS), ancient languages, geology, history and software engineering to create a comprehensive

digital database of all the petroglyphs at the site.

An endeavour such as this one, namely the documenting of an 11 ha section of terrain containing the petroglyphs as a unit had not been attempted before at the heritage site. Guided by the pilot project, PRG members began by using an unmanned aerial system (UAS) to capture nearly a thousand aerial images of the site. This enabled the creation of an orthophoto map of the terrain and was followed by months of fieldwork, in the first phase of which the geographic location of each rock containing one or more petroglyphs was recorded on the orthophoto map, with each rock being assigned a reference number. During the second phase of the fieldwork, between 40 and 70 photographs were taken of each rock and its petroglyphs from various angles using a Nikon D3200 (Fig. 2).

After each field trip, the datasets captured by the camera were organised and processed in the laboratory to the required formats for database importation. The processed dataset for each rock containing petroglyphs thus consisted of the following:

- A 2D image of the entire rock.
- A 2D image of each petroglyph or cluster of petroglyphs when located closely together on the rock.
- A 3D model of each petroglyph or cluster of petroglyphs.

The orthophoto map and processed images were then integrated into the database to establish a cohesive data-presentation flow for end users. In addition, enhancement tools such as digital shading for the 3D models and a combination of the Decorrelation Stretch (DStretch) and Contrast Limited Adaptive Histogram Equalisation (CLAHE) algorithms for the 2D images have been incorporated into the database to ensure optimal analysis capabilities for the data presented. Users can also upload their own 2D images, apply the tools and download the enhanced result.

The application of a combination of these built-in enhancement tools to the data captured at the Klerksdorp site has enabled the PRG team



Fig. 4: 2D image of Rock I23, enhanced and traced



Fig. 5: A 3D rendering of the section featuring the engraved ostrich and human figure, along with its 3D tracing viewed at a rotated angle of 40 along the X-axis. Scene number I23.1.

to create digital tracings of some of the faintest petroglyphs in both 2D (on the images) and 3D (on the models). These tracings will be incorporated into the database to complement the enhancement tools. This additional activity is important for advancing the study of the petroglyphs, given that the lines of some of them have become faint to the extent of not being clearly visible to the naked eye, whether by viewing the rock first-hand or in unenhanced photos. The tracings, therefore, facilitate easier discernment of the morphology of the petroglyphs, especially in the 2D images of the entire rock where certain details are lost when photographed from a distance (Figs 3, 4 and 5).

Given the substantial number of petroglyphs that exist at this remarkable site, the database will be populated and continually updated and integrated into a desktop application created for this project.

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100 YEARS SINCE TAUNG CHILD DISCOVERY

It has been 100 years since the discovery of the skull of the Taung Child, a find described as one of the biggest in the field of palaeontology. It was the first time researchers saw evidence of early humans walking in an upright position. The skull of a three-year-old child dating back some three million years, was found in 1924 in the Taung limestone quarry in the North West province.

Celebrating the centennial of the discovery of the Taung skull in South Africa and the 50th anniversary of the discovery of the Lucy fossil in Ethiopia, Breakthrough Initiatives and the Palaeontological Scientific Trust (PAST), along with the African Astronomical Society and the SA Radio Astronomy Observatory, hosted the third Life in the Universe Conference in Cape Town in August. The CEO of PAST, Kimberleigh Tommy, said: 'We celebrate these discoveries because

they put Africa on the map. It gave us an understanding of human evolution that we didn't know before and it ties in nicely with the recent celebration of three Unesco World Heritage Sites in the two countries.'



The Taung Child fossil (Wits University)

Tommy said the discovery of the Taung Child and Lucy skulls set off a journey of discoveries that shaped the way of understanding human evolution and humanity, as well as leading to Africa being seen as the Cradle of Humankind.

Tracy-Lynn Ruiters, 06/08/2024

IN MEMORIAM: DAWSON MUNJERI (1949-2024)

Cultural heritage practitioners in southern Africa will mourn the passing of Dr Dawson Munjeri in Zimbabwe on 29 April this year. He played a significant role in bringing southern African countries together in the mid-1990s after UNESCO had drawn attention to the fact that very few countries in Africa had formally signed the World Heritage Convention of 1972. South Africans, in particular, will remember his foresight and generosity in inviting delegates to participate in meetings in Harare in 1994 and 1995, and to identify places for possible nomination to the World Heritage List. On 16 December 1974, the General Assembly of the United Nations in resolution 3324 E (XXIX) recommended that ‘the South African regime should be totally excluded from participation in all international organisations and conferences under the auspices of the United Nations so long as it continues to practice apartheid and fails to abide by United Nations resolutions concerning Namibia and Southern Rhodesia’. It was not until 20 years later, on 4 May 1994, that in a statement congratulating ANC President Nelson Mandela on his election victory, the UNESCO invited South Africa to rejoin the organisation. On 10 July 1997, South Africa signed the Convention and moved towards nominating sites for the World Heritage List, assisted in many ways by Dawson Munjeri.

Dr Janette Deacon

Dr Dawson Munjeri held a PhD in International

Relations and Diplomacy, his doctoral thesis focusing on international laws governing the protection of cultural heritage in the specific case of restitution and repatriation of African cultural heritage looted during colonial times. He had an extensive career at the International Council on Monuments and Sites (ICOMOS) and UNESCO as a deputy permanent delegate of Zimbabwe (2002–2017) and a member of the Executive Board (2009–2013). He also worked as the executive director of the National Museums and Monuments of Zimbabwe (NMMZ) for five years (1993–2002), and as a professor at Midlands State University (2012–2024) and Great Zimbabwe University (2018–2024).

He represented ICOMOS in the UNESCO World Heritage Committee between 1997 and 2003 and was an advocate for the inclusion of African values in World Heritage listing. He is widely regarded as a contributor to the recognition of intangible cultural elements in World Heritage inscriptions and as a pivotal figure in the safeguarding of Zimbabwe’s cultural heritage. He often challenged the application of Eurocentric approaches in heritage conservation and the widespread application of European guidelines, which opened up new perspectives based on African standards and principles. *ICOMOS, with Prof. Munyaradzi Manyanga of Great Zimbabwe University, Prof. Shadreck Chirikure of Oxford University and Dr Pascall Taruvinga of Rhodes University.*

Continued from page 8

localised groups of hunter-gatherers. The boundary dissolved when Yamnaya-related ancestry spread across western Eurasia around 5 000 before present, resulting in a second major turnover that reached most parts of Europe within a 1 000-year span. The genetic origin and fate of the Yamnaya, also known as the Pit or Ochre Grave culture of the Pontic–Caspian steppe (3300–2600 BC) have remained elusive, but the authors show that hunter-gatherers from the Middle Don region contributed ancestry to them. Yamnaya groups later admixed with individuals associated with the Globular Amphora culture in central Europe (c. 3400–2800 BC) before expanding into Europe. Similar turnovers occurred in western Siberia, where the authors report new genomic data from a ‘Neolithic steppe’ cline spanning the Siberian forest steppe to Lake Baikal. These prehistoric migrations had profound and lasting effects on the genetic diversity of Eurasian populations.

Nature, 11/01/2024

OLDEST CAVE PAINTING IN INDONESIA

A cave painting believed to be 51 200 years old has been found at Leang Karampuang cave on the east Indonesian island of Sulawesi, researchers from Griffith University, Southern Cross University and the Indonesian National Research and Innovation Agency have reported in *Nature*. The painting shows three therianthropes and a wild pig. Uranium series dating was used to date the layers of calcium carbonate that had formed on top of the art. This allows the layers to be dated more accurately by ensuring younger and older materials are not mixed together.

The archaeologists also dated art at the nearby Leang Bulu’ Sipong 4 cave and found that the artwork, once believed to be 44 000 years old, was 48 000 years old. The new method is believed to be a major leap forward in tightening up the resolution and accuracy of dating.

BST, 04/07/2024

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'Porte des elephants', Mali by Robert Koch

Oil on canvas: 84 cm x 120 cm

Rock art dating back to Neolithic times throughout the Sahara shows that elephants were formerly widespread across much of North Africa. Nowadays they are restricted to the Gourma area, a remote region in Mali south of the Niger River near Timbuktu. These 400 or so elephants are the remnants of several herds that used to inhabit large areas of the Sahel as recently as 1970. Cape Gallery's Wildlife Exhibition from 25 August to 14 October 2024 seeks to expose Africa's rich ecological heritage.

**The South African
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This is the society for members of the public and professionals who have an interest in archaeology and related fields such as palaeontology, geology and history. Four branches serve the interests of members. They arrange regular lectures and field excursions guided by experts, annual and occasional symposia, and longer southern African and international archaeological tours.

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