

LAKE SIBAYA AND THE BEGINNING OF THE IRON AGE IN KWAZULU-NATAL

Gavin Whitelaw and Sue Janse van Rensburg

The term 'Iron Age' is a short-hand archaeological convention that refers to the period in which African farmers settled in and spread throughout the summer rainfall zone of South Africa. The term reflects the essential metallurgical skills maintained within these farming communities. Archaeologists divide the Iron Age in KwaZulu-Natal in two based on broad differences in material culture: the Early Iron Age from AD 450 to 1050 and the Late Iron Age from AD 1050 to about 1820, the onset of colonial settlement.



Fig. 1: Sue indicating the 2012 lake level with her hand. The southern basin lies behind her.

The essential outline of the Early Iron Age sequence in KwaZulu-Natal was established by the mid-1980s. It contained four phases: Matola (AD 450–600), Msuluzi (AD 600–800), Ndongondwane (AD 800–950) and Ntshekane (AD 950–1050). These names apply to the pottery styles of each phase and are usually derived from the names of the archaeological sites at which the associated pottery was first described.

Matola is an exception. In 1980 Tim Maggs suggested the name 'Matola' for a style that incorporated pottery from the sites of Silver Leaves near Tzaneen, Matola in Maputo and Mzonjani in Durban. Although Maggs (1980) recognised differences across the three sites, he felt that Matola provided a link that united them within a single style cluster dating from about AD 300 to 600. Menno Klapwijk (1974), who excavated Silver Leaves, had already noted a similarity with Kwale pottery in East Africa. Matola and Kwale pottery

provided evidence for the spread of African farmers from eastern to southern Africa early in the Common Era.

Gavin Whitelaw is an archaeologist at the KwaZulu-Natal Museum and a committee member of the KwaZulu-Natal Branch of the South African Archaeological Society. gwhitelaw@nmsa.org.za.

Sue Janse van Rensburg is the Grasslands-Wetlands-Forests Node Coordinator for the South African Environmental Observation Network and an ArchSoc member. sue@saeon.co.za.

OTHER FEATURES IN THIS ISSUE

- 5 Some interesting rock paintings – *Pieter Jolly*
- 9 The Southern African Archaeological Student Council – *Mariette Harcombe et al.*
- 15 What the archaeological record reveals about epidemics throughout history – *Charlotte Roberts et al.*
- 17 African roan antelope, Ethiopian 'unicorns' and European medieval art – *Francis Thackeray*
- 20 Coronavirus healthcare communication in endangered languages – *Megan Laws et al.*

Research refinements in the mid-1990s resulted in the splitting of Matola into two successive phases, namely Silver Leaves (AD 280–450) and Mzonjani (AD 450–600). The split formalises the variation that Maggs noticed in his Matola style cluster. Excavations at Silver Leaves and Matola yielded pots with bevelled lips and bowls with multiple flutes, but these decorative features are largely absent from the younger Mzonjani assemblage. The name Matola thus falls away because Silver Leaves has priority in Iron Age research history, and Mzonjani is recognised as a development out of Silver Leaves (Klapwijk and Huffman 1996).

Silver Leaves sites occur in north-east South Africa, south-east Zimbabwe and southern Mozambique. Till now, none had been identified in KwaZulu-Natal; here, Mzonjani sites were taken to mark the start of farming history. This made geographic sense. Settlement in



Fig. 2a–c: Lake Sibaya Silver Leaves: sherds of fluted bowls and pots with an incised line on the rim. Scale in 1 cm (2a and 2b) and 5 cm units (2c).



Fig. 3: Fluted bowl, Amafa collection. Its completeness suggests it came from a pit. Scale in 1 cm units.

the more southerly KwaZulu-Natal region happened later, after farmers had created the Mzonjani pottery style. But now, new finds from Lake Sibaya show that farmers did settle in the province during the Silver Leaves phase, perhaps some 200 years before Mzonjani. Lake Sibaya provides local evidence from the very beginning of the southern African Iron Age.

Lake Sibaya

Lake Sibaya lies north of Lake St Lucia in Maputaland and within the iSimangaliso Wetland Park, a World Heritage Site. It is separated from the shoreline by a high, 2 km wide dune ridge. Originally connected to the sea, either as part of a lagoon complex or drained according to changing sea levels, Lake Sibaya was cut off from the sea by dune formation some 5 000 years ago. In time, it became a freshwater lake, the largest in South Africa. Its catchment measures some 540 km², of which about 65 km² is the lake itself (in the 2000s). Its waters derive mainly from groundwater and cyclones add an occasionally significant deluge.

The lake's deepest point reaches 20 m below sea level. In 2012 its surface stood at about 22 m above sea level. Since then the lake has receded in the face of drought and water abstracted for human use in nearby Mbazwana, Sodwana and Mseleni. Tree plantations in the catchment also affect groundwater availability significantly. The effects are especially



Fig. 4: Sue looking over the southern basin. One Silver Leaves site is in the far distance in the deflated area on the right, behind Sue.

obvious in the lake's small southern basin (lake surface = 5 m above sea level) (Fig. 1), which is now cut off from the northern basin (lake surface = 15 m above sea level). The dramatically different lake levels in the two basins show that they are separate entities at depth.

Probably sometime in 2015 (according to Google Earth imagery), the receding water exposed two Silver Leaves sites on the edges of the southern basin. Sue Janse van Rensburg recorded the sites after hearing of finds from Sodwana residents (Figs 2 and 3). At her urging, archaeologists from Amafa aKwaZulu-Natali visited the sites in 2019. More reports came to the KwaZulu-Natal Museum early in 2020 from Sodwana residents and their friends. New archaeological exposures exist for the northern basin too, where in 2014 Len van Schalkwyk found what he assumed to be an Mzonjani sherd knee-deep into the lake. With hindsight, the sherd is probably Silver Leaves. In 2018 he found a grindstone and smelting debris at the same place, then in ankle-deep water.

The lake is today well below any level recorded since 1965. Clearly, it was about as low when the first farmers established their homesteads around it. Based on the distribution of 'Matola' sites (i.e. Silver Leaves and Mzonjani), Gavin Whitelaw and Mike Moon (1996) suggested that the first settlement of farmers in southern Africa coincided with a particularly dry period. The Lake Sibaya sites offer support for their hypothesis and suggest that the dry period was sufficiently extreme and long-lasting to reduce the lake to today's lows without the help of tree plantations and modern domestic and commercial consumption.

Fossil pollens from across southern Africa provide independent support. These suggest a subcontinent-wide dry period around 2 000 years ago, perhaps caused by a more dominant El Niño circulation (Scott et al. 2012). Diatom sequences from Lake Sibaya similarly indicate dry conditions at AD 150, with the lake perhaps reduced to its lowest level of the last 1 800 years – perhaps until now (Stager et al. 2013).

It evidently did not recover before Silver Leaves farmers built homesteads along its shores.

Pollens preserved in Lake Sibaya sediments point to humid conditions and possibly a high lake level during the Early Iron Age, but the dating is imprecise (Neumann et al. 2008). The distribution of archaeological sites in KwaZulu-Natal suggests that the humid signature accumulated mainly in the Msuluzi phase, between AD 650 and 800. In this period farmers expanded to the limits of bushveld environments throughout the region, to the extent that Maggs once referred to Msuluzi pottery as 'the common expression' of the Early Iron Age. Conditions must have been

good for farming, and the rising Lake Sibaya probably drowned the Silver Leaves sites, perhaps until 2015.

Future work

While our knowledge of other Early Iron Age phases is reasonable, we know relatively little about the Silver Leaves phase. The original site produced good data. It is the remains of a settlement with wood and mud-plaster buildings where the occupants dug deep storage pits, filled them later with refuse, and conducted some ironworking (forging rather than smelting, given the size of the slag pieces). They cultivated bulrush (or pearl) millet, probably alongside other crops, and most likely herded cattle (their Mzonjani descendants kept cattle). Direct and circumstantial evidence from sites in Zimbabwe and Mozambique support this picture (Huffman 1978; Morais 1988). Most sites, for instance, contain evidence of ironworking and their distribution reflects the importance with which these early farmers regarded iron ore sources. Special purpose sites also exist; in the Limpopo Lowveld small groups (most likely of women) from local homesteads made salt in the winter months around salt-rich marshes. Some Silver Leaves salt-makers at the Baleni marsh, who probably lived in a more distant homestead, built a



Fig. 5: Silver Leaves hut posts? Scale in 5 cm units.

seasonal camp for more comfortable, secure and longer expeditions (Antonites 2005, 2016).

The Lake Sibaya sites provide an opportunity to learn from a different context. Silver Leaves homesteads were likely dotted all around the lake (Fig. 4). Their sandy situation is not ordinarily conducive to organic preservation, but their inundation for possibly 1 400 years might have permitted a better result. Clusters of old wood on the sites are, remarkably, possibly the residues of homestead structures (Fig. 5). If so, it may be possible to establish plant-human relations at the very beginnings of agriculture in the region, as well as provide some direct indication of the local flora then. Covid-19 and project approval permitting, we hope that fieldwork can start soon. The project meshes nicely with research planned by archaeologists Emma Loftus and Abi Moffett in the iSimangaliso Wetland Park, which creates the opportunity for longer-term collaboration. Moreover, it could contribute to an improved understanding of the ecological history of the lake catchment, especially to a disentangling of human-induced and natural change. Watch this space ...

References

- Antonites, A. 2005. The salt of Baleni: an archaeological investigation into the organisation of production during the Early Iron Age of South Africa. Unpublished MA dissertation, University of Pretoria.
- Antonites, A. 2016. The organisation of salt production in early first millennium CE South Africa. *Journal of Anthropological Archaeology* 44: 31–42.
- Huffman, TN. 1978. The Iron Age of the Buhwa District, Rhodesia. *Occasional Papers, National Museums and Monuments of Rhodesia* 4(3): 81–100.
- Klapwijk, M. 1974. A preliminary report on pottery from the north-eastern Transvaal, South Africa. *South African Archaeological Bulletin* 29(113 & 114): 19–23.
- Klapwijk, M & Huffman, TN. 1996. Excavations at Silver Leaves: a final report. *South African Archaeological Bulletin* 51(164): 84–93.
- Maggs, T. 1980. Mzonjani and the beginning of the Iron Age in Natal. *Annals of the Natal Museum* 24(1): 71–96.
- Morais, JM. 1988. *The early farming communities of southern Mozambique*. Studies in African Archaeology 3. Stockholm: Central Board of National Antiquities & Maputo: Eduardo Mondlane University.
- Neumann, FH, Stager, JC, Scott, L, Venter, HJT & Weyhenmeyer, C. 2008. Holocene vegetation and climate records from Lake Sibaya (South Africa). *Review of Palaeobotany and Palynology* 152: 113–128.
- Scott, L, Neumann, FH, Brook, GA, Bousman, CB, Norström, E & Metwally, AA. 2012. Terrestrial fossil-pollen evidence of climate change during the last 26 thousand years in southern Africa. *Quaternary Science Reviews* 32: 100–118.
- Stager, JC, Ryves, DB, King, C, Madson, J, Hazzard, M, Neumann, FH & Maud, R. 2013. Late Holocene precipitation variability in the summer rainfall region of South Africa. *Quaternary Science Reviews* 67: 105–120.
- Whitelaw, G & Moon, M. 1996. The ceramics and distribution of pioneer agriculturists in KwaZulu-Natal. *Natal Museum Journal of Humanities* 8: 53–79.

SA Archaeological Society Northern Branch

CALL FOR 2021 GRANT APPLICATIONS

The South African Archaeological Society's Northern Branch invites applications for funding for 2021 by researchers and educators in the field of archaeology. South African archaeological research projects and educational programmes that promote the knowledge and understanding of archaeology will be given consideration. Awards may be split over more than one project. The deadline for applications is **30 November 2020**.

Applications must include the following:

1. An outline of the research or education proposal, anticipated project results or benefits, the project implementation schedule, the total budget estimate and the grant amount being applied for.
2. Should the project or programme to be funded form part of a larger project, details of how the funded part relates to the whole.
3. The resources and facilities available for implementing the project or programme.
4. A breakdown of the amount applied for into

discrete expenditure categories to permit an award to be made for specific cost items.

5. Biographical details of the applicant(s), including professional qualifications and experience.
6. Two references attesting to the quality and success of previous archaeological or educational project work.
7. Plans to publish the research results.

Successful applicants will be required to provide six-monthly progress reports and a final project report. On completion of the project, an article on the project is to be supplied for publication in *The Digging Stick*.

Applications should be forwarded to the Secretary, Northern Branch at secretary@archaeology.org.za or to PO Box 41050, Craighall 2024. Enquiries may be directed to Dr Graham Reeks at uniwit@lantic.net or 084 518 9865.

The successful applicant/s will be notified by the end of December 2020.

SOME INTERESTING SAN ROCK PAINTINGS

Pieter Jolly

In this article two very unusual San paintings, and one interesting class of San paintings, are briefly discussed. One of the unusual paintings may depict an eland calf sucking from its mother. The other painting appears to show a snake or serpent on top of the body of an eland, projecting from its head. As well as these two paintings, a number of paintings that show people, animals or imaginary creatures in a running/flying posture are presented and discussed.

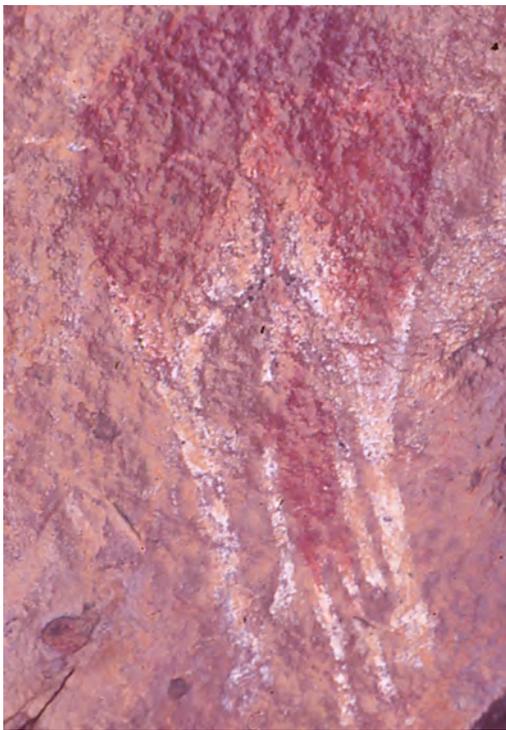


Fig. 1: An eland calf and mother depicted from the rear

A painting of an eland calf apparently sucking milk from its mother

The photograph reproduced in Fig. 1 is from a site in Lesotho. It seems to show a very young eland calf sucking milk from its mother. Initially I thought this image showed an eland calf in the process of being born. However, this seems unlikely as eland calves emerge from their mother with their front legs first, followed by their heads. If it was dropping to the ground, head downwards, at birth, we should see the head clearly. However, in the painting it seems that

Pieter Jolly is a rock art researcher with a particular interest in the effects of interaction between the south-eastern San and southern Nguni/Sotho groups on San rock art. His other rock art interests include San paintings of therianthropes and the conservation of rock paintings in Lesotho through public education and outreach programmes.

the eland calf is stretching its body, including its head, forwards and upwards, towards its mother and partly between her back legs. Its head does not seem to be shown, probably because it is under the mother's belly, apparently sucking milk. Usually the eland calf sucks from the side of, or completely under, the mother. In this case, it seems to be partly under the rear portion of its mother's body. It is also possible, but perhaps less likely, that it is a new-born eland that is struggling to its legs and seeking the close protection of its mother.

If this painting does depict an eland calf sucking milk it may be the only known San painting of this kind. According to Patricia Vinnicombe (1976) there are several sites where paintings of rhebuck fawns being suckled by their dams are depicted, and she remarks that paintings of rhebuck fawns are quite common (see Vinnicombe (1976: xx) and Townley Basset (2001, cover illustration and Plate 25, for example). Vinnicombe (1976: 196) goes on to say: 'It is remarkable that, despite the many paintings of eland, eland calves are very seldom shown, and none in the act of sucking has yet been found'. That was about 45 years ago, and it is possible that some paintings of this kind have been found since. It is probably relevant that the painting comes from a larger panel that seems to have the theme of family and mating. Eland cows and large eland bulls mix in the panel and four of the cows are depicted from the rear, with one, perhaps more, of them shown with their tails drawn to the side (Fig. 2). This may suggest an invitation to the bulls to mate. Lewis-Williams (1983: 62) points out, with respect to a painting of female eland shown from the rear, that the female flicks her tail from side to

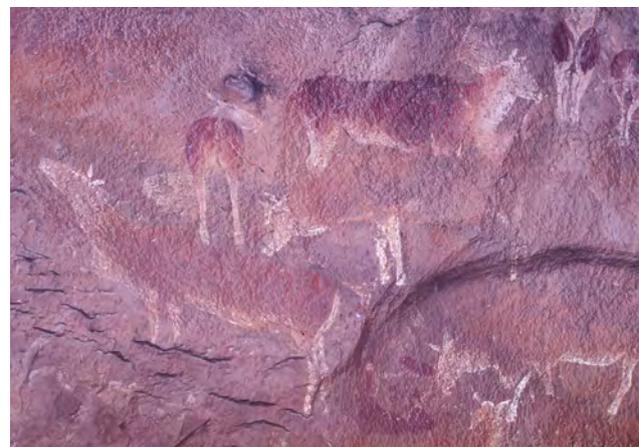


Fig. 2: A different section of the same panel showing another eland cow with her tail drawn to the side



Fig. 3: A detail from Plate 68 in Stow and Bleek, 1930

side as the male approaches her to mate. However, this is also the position of the tail when a calf is being born (David Ambrose, pers. comm.). It is possible that what is depicted in the panel is a nursery herd. Eland form nursery herds after the birth of calves; the large bulls protect the cows and calves against predators (www.krugerpark.co.za/africa_eland.html).

People, animals and imaginary creatures depicted in a running/flying posture

Paintings of people and, perhaps less frequently, realistically painted animals as well as imaginary creatures, who are depicted in a running/flying posture with their legs almost parallel to the ground, are a relatively common feature of the art of the south-eastern San (Fig. 3). This exaggerated and unrealistic posture may simply be a way for the artists to indicate the speed at which these people or animals are running – flat out. Or it may sometimes have symbolised more than this to the artists. A number of paintings in which this posture is depicted contain symbolic, sometimes completely imaginary, elements.

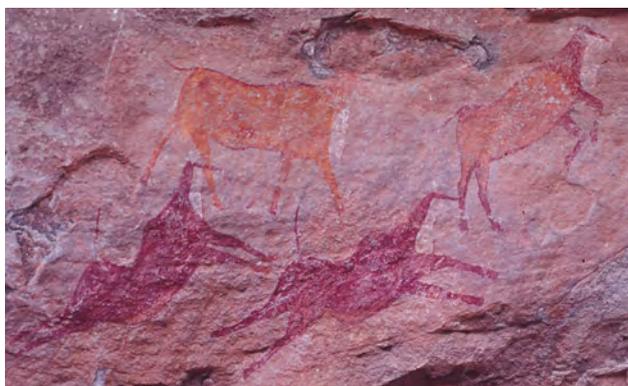


Fig. 4: Cattle depicted in a running/flying posture

In the panel illustrated in Fig. 4, cattle are painted realistically, except that two of them are shown in the running/flying posture and two others (one of them not shown here) are depicted bleeding from the nose, a very likely indicator that trance experience is being referred to in some way (Lewis-Williams 1981). There are, moreover, a number of San paintings of creatures with body forms that indicate they are imaginary, which are depicted in the running/flying posture. Fig. 5 depicts a creature of this kind, which Dialkwain, Wilhelm Bleek and Lucy Lloyd's /Xam San mentor, identified as *Keru* – presumably a mythological being.¹



Fig. 5: People depicted in a running/flying posture. Detail from Stow and Bleek, 1930, Plate 18.

Fig. 6 depicts a creature that combines imaginary features with human features, also in the running/flying posture, while Fig. 7 shows a creature with human and cattle features in that posture. The creature in Fig. 8, also in this posture, has an antelope head, the torso (apparently) of another animal and what may be human arms instead of front legs, as well as strange, clawed back feet that seem to be



Fig. 6: A therianthrope being depicted in a running/flying posture

completely imaginary. The last two paintings, which are remarkably similar in certain respects, also have their bodies decorated with patterns that seem to

¹ De Prada-Samper and Hollmann (2017: 18–19) identify a different spelling of this name in a Bleek-Lloyd manuscript recently discovered by De Prader-Samper, and they cite Helize van Vuuren's suggestion that the Cape-Dutch name for this creature, provided in this manuscript, could be translated as 'trickster of the veld'.



Fig. 7: A therianthrope being with cattle and other non-human features depicted in a running/flying posture. Copy by James Walton. Iziko South African Museum Collections. Accession no: IZI JMW 01 18HC.

that some Sotho people purified themselves before eating eland meat 'because they believed the meat to be charged with venomous juices associated with a dangerous viper thought to live between the horns and hidden in the tuft of hair on the forehead [of elands]'. She also references Theophilus Hahn, who, writing in 1881, refers to a 'Khoi belief that a snake lived on the forehead of all eland' (Vinnicombe 1975: 393). And Junod (1927: 65) was told by one of his Tsonga informants that a green snake lived between the horns of the kudu. Vinnicombe (1976: 233) remarks that some snakes/serpents in the art are depicted with antelope heads

resemble human body painting or ornaments worn on the body. The unrealistic and bizarre features of some of the paintings depicting creatures in the flying/running posture indicate that these paintings are primarily symbolic. Whether their being shown in this posture is simply incidental to the obvious symbolism apparent in the paintings, in other words they are imaginary creatures who just happen to be shown running at great speed, is not clear.



Fig. 8: An imaginary being depicted in a running/flying posture. Photo by Lucas Smits.

A painting of an eland with a snake/serpent on its back and head

A very large painting of an eland bull from a shelter in Lesotho depicts an eland with what seems to be a snake or serpent on the ridge of its back and protruding beyond its head (Figs 9 and 10). This is a highly unusual, possibly unique, feature within the corpus of San paintings of eland and other antelope. I know of only three references in the ethnography of southern African peoples to snakes/serpents being found on the forehead of antelope. Vinnicombe (1975: 393) points out that, according to the Paris Evangelical Society, missionary Thomas Arbousset, wrote in 1852



Fig. 9: A very large, shaded, polychrome eland

and horns, and she suggests that this may indicate a link between eland and snakes or, more probably serpents, in San religious thought. See Guenther (2019: 75) for references to this feature of San art. Certainly, both eland and snakes/serpents were associated with rain/water by the San.



Fig. 10: The head of the eland in Fig. 9 with a snake/serpent running along the top of its back and head and protruding from the head

Some of the beliefs mentioned above may be relevant to the way we interpret the features of the eland painting discussed here.

Acknowledgement

I am grateful to Petro Keene for pointing me to the Junod reference. I also thank the Iziko South African Museum for permission to reproduce the Walton rock art copy (Fig. 7).

References

De Prader-Samper, JM & Hollmann, JC. 2017. 'From the lips of the Bushmen'. Unpublished /xam San comments on Stow's South African rock art copies. *Southern African Humanities* 30: 1–34.

Guenther, M. 2019. *Human-animal Relationships in San and Hunter-gatherer Cosmology* (Vol. 1). Cham: Palgrave Macmillan.

Junod, HA. 1927. *The Life of a South African Tribe* (Vol. II). London: Macmillan and Co.

Lewis-Williams, JD. 1981. *Believing and Seeing: symbolic meanings in southern San rock paintings*. London: Academic Press.

Stow, GW & Bleek, D. 1930. *Rock Paintings in South Africa*. London: Methuen & Co.

Townley Basset, S. 2001. *Rock Paintings of South Africa: revealing a legacy*. Cape Town: David Philip.

Vinnicombe, P. 1975. The ritual significance of the eland (*taurotragus oryx*) in the rock art of southern Africa. In: Anati, E (ed.), *Proceedings of the International Symposium on Prehistoric Religions, Capo di Ponte, Valcamonica*: 379–400. Capo di Ponte: Centro Preistorici.

Vinnicombe, P. 1976. *People of the Eland: rock paintings of the Drakensberg Bushmen as a reflection of their life and thought*. Pietermaritzburg: University of Natal Press.

SOUTH AFRICAN ARCHAEOLOGY

Croc-like carnivores in SA 210 mya

Giant, predatory croc-like animals known as raiusuchians that lived during the Triassic period in southern Africa preyed on early herbivore dinosaurs and mammal relatives 210 million years ago, according to Wits Masters student Rick Tolchard. The fossils studied by Tolchard include teeth, pieces of jaws, hind limbs and body armour. Raiusuchians are closely related to crocodiles as we know them today. They had a diversity of body shapes and sizes during the Triassic period. The specimens described in the research include some of the largest carnivorous members of this group, which were possibly up to 10 m long and had serrated, curved teeth.

The study, published online in the *Journal of African Earth Sciences*, shows that the raiusuchians were some of the latest-surviving members of their group and that they were thriving close to the Antarctic Circle, the theoretical limit for their physiology. They went extinct about 200 million years ago, paving the way for dinosaurs to become the dominant large land animals. Tolchard studied fossils from collections based at the University of the Witwatersrand, the Iziko South African Museum and the National Museum in Bloemfontein. He was joined in the research by an international team, including researchers from the USA, Argentina and the UK. *Wits University, 23/09/19*

Earliest evidence of the cooking of starch

New discoveries made at the Klasies River Cave in the southern Cape, where charred food remains from hearths were found, provide the first archaeological evidence that anatomically modern humans were roasting and eating plant starches, such as those from tubers and rhizomes, as early as 120 000 years ago. New research by an international team of archaeologists, published in the *Journal of Human*

Evolution, provides evidence to support the hypothesis that the duplication of the starch digestion genes is an adaptive response to an increased starch diet. 'This is very exciting. Genetic and biological evidence has previously suggested that early humans would have been eating starches, but this research had not been done before', says Cynthia Larbey of the Department of Archaeology at the University of Cambridge. The work is part of a systemic multidisciplinary investigation into the role that plants and fire played in the lives of Middle Stone Age communities.

The interdisciplinary team searched for and analysed undisturbed hearths at the Klasies River site. 'Our results show that these small ashy hearths were used for cooking food, and starchy roots and tubers were clearly part of their diet, from around 120 000 years ago to 65 000 years ago,' said Larbey. 'Despite changes in hunting strategies and stone tool technologies, they were still cooking roots and tubers. Prof. Sarah Wurz from the School of Geography, Archaeology and Environmental Studies at Wits University and principal investigator of the site, added: 'Early humans followed a balanced diet and were ecological geniuses, able to exploit their environments intelligently for suitable foods and perhaps medicines'. By combining cooked roots and tubers as a staple with protein and fats from shellfish, fish and small and large fauna, these communities were able to optimally adapt to their environment.

The research was inspired by Prof Hilary Deacon, who passed on the directorship of the Klasies River site on to Wurz. He did ground-breaking work at the site and in the 1990s pointed out that there would be plant material in and around the hearths. However, at the time, the micro methods were not available to test this hypothesis. *Wits University, 17/05/19*

THE SOUTHERN AFRICAN ARCHAEOLOGY STUDENT COUNCIL

Reflecting on the road thus far and reimagining the future

Mariette Harcombe,¹ Cherene de Bruyn,² Kelita Shadrach,³ Enio Tembe,⁴
Suramya Bansal,⁵ Lu-Marie Fraser,⁶ Tim Forssman⁷ and Matt Lotter⁸

At the Association of Southern African Professional Archaeologists (ASAPA) conference held in Mbabane, eSwatini, in 2011, Tim Forssman and Matt Lotter were inspired by the then retiring members, Tom Huffman and Tim Maggs, and the legacy they left behind. Wanting to do something for the archaeological community, they began working on an initiative around student development. Throughout their studies, and in particular while conducting their postgraduate research, they had to learn a great variety of skills in order to cope. It was the need for such skills that led to the idea of the Student Development Workshop (SDW).

The inaugural SDW was held in November 2013 just outside Parys in the Free State. With support from numerous sponsors, including ASAPA and the Palaeontological Scientific Trust (PAST), which became a regular funding partners, the workshop was designed to address issues most relevant to young and aspiring archaeologists, primarily students in their final year of an undergraduate degree or enrolled at postgraduate level. Importantly, the workshop saw the formation of the Southern African Archaeology Student Council (SAASC) to represent the needs of students and act as the organising committee of the workshop.

Over the past six years, the SDWs have provided enriching experiences for archaeology students from universities not only in South Africa but also from countries throughout the Southern African Development Community (SADC), and even from institutions in Europe, Asia and the United States.



Parys 2013: The first group photo of many SDWs to come

Participating SADC countries have included South Africa, Lesotho, Mozambique, Zimbabwe, Botswana, Malawi, Tanzania and Zambia, with students representing an impressive list of participating institutions, including the universities of the Witwatersrand, Pretoria, South Africa, Cape Town and KwaZulu-Natal, the Sol Plaatje University, the National University of Lesotho, the Midland State University (Zimbabwe), the University of Zimbabwe, Universidade Eduardo Mondlane (Mozambique), the University of Zambia, the Catholic University of Malawi, the University of Botswana, and the University of Dar es Salaam (Tanzania).

The SDWs have provided students with contact to a network of peers and professionals that have provided information and advice on how to advance their careers. Many students have also obtained a glimpse of the lives and work of archaeologists outside their university spheres.

An organisation for students, by students

The SAASC is an organisation for students, by students. Simply put, this infers that those who seek to improve their student experiences are students themselves. This places them closer to the issues, concerns and needs of students than archaeologists who have commenced their formal careers. The SAASC not only aims to assist students in their development as academics or professionals but also to act as a forum through which issues such as harassment in the field, mental health and career

¹ SAASC chair. Heritageworx. amharcombe@gmail.com.

² SAASC media and events coordinator. PGS Heritage. cherene.debruyne@yahoo.com.

³ SAASC secretary. Wits University. kelitashadrach@gmail.com.

⁴ SAASC SADC representative. Eduardo Mondlane University. eniotembe01@gmail.com.

⁵ SAASC international student representative. Wits University. bansal.suramya@gmail.com.

⁶ University of Pretoria. chidoryx@hotmail.com.

⁷ University of Pretoria. tim.forssman@up.ac.za.

⁸ Wits University. mattlotter@gmail.com.

development opportunities can be addressed.

The progress achieved by the SAASC has been significant in that it has moved beyond the mere organisation of SDWs to engage in outreach programmes managed by other student bodies. For example, since 2018, SAASC has participated in PACS (Pretoria Archaeology Club for Schools) events, including the Archaeology Open Day in Mamelodi and the PACS Archaeology Olympics. These events saw students from local schools networking with professional archaeologists and postgraduate students from various universities, museums and cultural resources management (CRM) companies, as well as engaging in archaeology related materials and activities.

As SAASC looks to the future, there is still a lot to be achieved in terms of transforming southern African archaeology and enriching the lives of future archaeologists. Paramount to achieving these goals is the provision of free workshops and other experiences so that financial barriers no longer exclude members of the student community.

Student workshop highlights: 2013–2018

Since 2013, the SDW's have continued to attract a full contingent of student participants. At present the SDW accommodates an average of 25 to 30 students, five to seven council members and 15 professional archaeologists who present lectures and practical sessions. With each workshop we invite leading early career experts to present on various topics ranging from fieldwork skills, laboratory analysis and funding applications to publishing peer-reviewed papers and presentation skills. Five SDW's have been hosted across South Africa and one in Lesotho.

In the section that follows, we have tried to mention the numerous professionals and subject specialists who have contributed towards the success of the workshops.

Parys 2013

This inaugural five-day workshop addressed issues most relevant to young and aspiring archaeology professionals. The ASAPA Student Council established at this event consisted of Tim Forssman and Matt Lotter (co-chairs), Lu-Marie Fraser (secretary), Jacqueline Jordaan (operations) and Simone Bradley (treasurer). The workshop paved the way for future student support, which was promoted via social media and the creation of a website.

Clanwilliam, Western Cape 2014

During December 2014, the second workshop was held at the Living Landscape Project Centre near Clanwilliam in the Western Cape. It was attended by 22 students along with five council members. Lectures included topics on first aid in the field (Dalene Mart), Stone Age archaeology (Alexandra Sumner), careers

in archaeology (Dave Halkett and Natalie Kendrick), CRM work (Wendy Black), museum work (Wilhelmina Seconna), wildlife conservation (Rika Du Plessis) and underwater archaeology (Jake Harding). The workshop concluded with a community outreach project in conjunction with the Children's Book Network.

Bushtrails Environmental Centre, Magaliesburg 2015

The third SDW was held from 30 November to 5 December 2015 at the Bushtrail Environmental Centre outside Magaliesburg in Gauteng. This was the largest workshop to date, with 42 students, four council members and 15 speakers (some facilitating more than one session) participating. The first Student Roundtable took place. During this a range of issues were discussed, with contribution from a panel of knowledgeable archaeologists from universities, museums, the CRM field, as well as the then ASAPA chair, Catherine Namono.

A wide range of topics were covered during the week, including stone tool knapping (Rosa Moll), archaeobotany (Shannon Hardwick), macro-and micro-wear studies (Justin Bradfield), glass beads and ceramics (Wim Biemond), human remains and ethics (Amanda Esterhuysen), stable isotopes (Grant Hall), thinking outside the box (Heidi Fivaz) and career opportunities and what to expect from a post-doctoral fellow (Annie Antonites). Practical activities included stone tool knapping, a ceramics session, basic bead analysis and GPS tracking. Additional activities included snake and wildlife awareness, off-road vehicle safety, basic firearm handling and safety, and a range of team building activities.

A new council was elected, including Lu-Marie Fraser (chair), Mariette Harcombe (secretary), Peter Morrissey (treasurer), Nthabiseng Mokoena (SADC representative) and Rosa Moll (workshop coordinator).



Bushtrails 2015: Some practical activities included a ceramics workshop, glass-bead analysis, site surveying, snake handling and safety, stone tool knapping and a team-building experience on an obstacle course.

Groenkloof Nature Reserve, Pretoria 2016: The 2016 SDW was held at the Groenkloof Nature Reserve in Pretoria. Lecture topics included academic writing and conference poster design (Mariette Harcombe), faunal analysis (Karin Scott and Lu-Marie Fraser), experimental archaeology (Graham Reeks and Rosa Moll), physical anthropology (Amanda Estherhuysen), isotope studies (Nandipha Masemula), cultural etiquette (Natalie Swanepoel), decolonising archaeology (Catherine Namono), community and outreach archaeology (Nthabiseng Mokoena and Mpho Maripane), site surveying (Francois Coetzee), mapwork (Matt Lotter), site drawings and technical illustrations (Lesley Deysel), artefact storage and photography (Anza Mehnert), career opportunities (Stephany van der Walt) and military archaeology (Anton van Vollenhoven).

The week's activities ended with a tour of Fort Klapperkop and Fort Schanskop dating from the Anglo-Boer War. Notably, the 2016 SDW continued to experience a growing number of student participants from elsewhere in the SADC region, including Malawi, Mozambique, Tanzania, Lesotho and Zimbabwe.

Bushtrails Environmental Centre, Magaliesburg 2017

The 2017 SDW marked the return to Bushtrails Environmental Centre outside Magaliesburg. Lecture offerings included presentations on experimental fire (Silje Bentsen), Tanzanian archaeology (Elgidius Ichumbaki), archaeology as a profession in Tanzania (Rachell Warren), the challenges of museum work (Lindsay Marshall), the Rising Star expedition (Lindsey Hunter), decolonising archaeology (Sarah Wurz), applying for excavation permits through SAHRA (Nthabiseng Mokoena), compiling CVs and job applications (Lu-Marie Fraser), bone tools (Justin Bradfield), Phytoliths (Tanya Hattingh), LIDAR (Francois Coetzee) and archaeological theory (Natalie Swanepoel).

A lecture on stone tool mechanics, hafting and Stone Age hunting (Graham Reeks, Karin Scott and Mariette



Bushtrails 2017: The ancients had skills, but do we? Students try their hand at hunting the 'grassy gazelle' (insert), an antelope made of wood and coconut fibres

Harcombe) was followed by three practical activities: stone toolknapping, hafting (spear-making) and spear-throwing, which saw students testing their homemade spears. A lecture on beadwork (Rina Faria) was followed by two beadwork practicals. To conclude the week's formalities, a new council was elected with Mariette Harcombe (chair), Kelita Schadrach (secretary), Nandipha Masemula (treasurer), Antoine Rossouw (workshop coordinator) and Énio Tembe (SADC representative). Because of the growing demands on council, two additional council positions were created: social media correspondent and outreach and events held by Lesiba Phahladire and Cherene de Bruyn respectively. The 2017 SDW was rounded off by a visit to the Maropeng exhibition centre and a tour of the Sterkfontein Caves.

Mokhotlong, Lesotho, 2018: This was a landmark year for the SAASC as it was the first time that an SDW was hosted outside South Africa. Thanks to the kind invitation extended by PGS Heritage, 23 students and seven council members made their way up to the Mokhotlong mountains of Lesotho.



Mokhotlong 2018: A lecture venue with a difference. Students attend a lecture presented by Dr Tim Forssmann, with the Mokhotlong mountains as the backdrop.

Wouter Fourie, a director of PGS Heritage, welcomed the SDW group to Lesotho and provided details on the scope and implementation of their work in Lesotho. Lectures included talks on career possibilities in CRM (Ilan Smeyatsky), landscape archaeology (Tim Forssman), the East Fort public archaeology project (Mariette Harcombe), the Later Stone Age in Mozambique (Énio José Tembe), the archaeology of Lesotho (Nthabiseng Mokoena), touring Africa by motorcycle (Trent Seiler), 3D scanning and LIDAR (Len van Scalkwyk), rock art recording methods and trends in research publication (Ghilraen Laue), southern African rock art (Jeremy Hollman), data collection in rural communities (Sam Challis) and wildlife conservation (Dylan Smith). Students from the National University of Lesotho treated the group to a traditional Basotho dance performance, which was accompanied by a lecture on Basotho traditional attire and the origins of the iconic Basotho blanket and hats.



Student presentations are welcomed from anyone who is willing to present, irrespective of degree level or personal experience in presentation.

Transitioning from an undergraduate to postgraduate degree is daunting. Students often experience expectational pressures by lecturers and funding bodies in terms of their academic performance,

Because of its location amidst the mountains of Lesotho, many outdoor activities were enjoyed, including a lunchtime walk along the valley accompanied by a 'walk-along' discussion on intangible culture and the impact infrastructure development may have on the lives of rural communities. Site visits to PSG Heritage's research sites also featured.

Student presentations

One of the key elements of the SDW's is the inclusion of a Student Presentation session where students are provided with an opportunity to present their own research. As most of the participants have not yet had the opportunity to present a formal lecture, the exercise serves as a 'practice run' for future presentations in front of an audience in a supportive learning environment.

During the 2019 ASAPA conference, a Student Presentation session, in addition to poster presentations, was hosted by SAASC. Here students were once again given the opportunity to present their research, with comment and feedback being given after each talk. Such a session also featured on the SAASC Facebook page as a live event, streamed to those who could not attend the conference. Enabling students to present on an open platform provides mentoring opportunities from the SAASC and professionals. As part of the council's feedback, constructive criticism and advice is provided. Presentation style and visual and overall content is evaluated in terms of clarity, detail and professionalism.

Students with public speaking experience are also encouraged to present talks as this serves as an example to others. It has been observed that students participating in these session gain in confidence and improve their presentation skills to such an extent that it leads them to pursue the publication of their research, presenting at academic conferences and continuing their studies in archaeology.

Looking towards the future

Digital outreach in a post-Covid-19 world:

as well as having to manage disorientation and culture shock should they attend a new university for postgraduate studies (Menzies and Baron 2014). In combination with the Covid-19 pandemic, students are placed in a compromising situation, away from their supportive network and the resources previously available to them. In consideration of this, the SAASC has had to rethink how it addresses its archaeological outreach. In recent months, many educational activities had to be conducted via correspondence or hosted remotely using apps such as Zoom, Skype and Google Meet.

In this 'new normal', innovations in online learning are shaping the way we learn, think and work. In addition, the sphere of influence is much wider and opportunities to connect to broader audiences are far greater. While physical interactions (such as lectures and workshops) limit us geographically, online experiences are truly borderless. In the past, although our council provided travel support to students who came from as far afield as Tanzania and Malawi, there were always students who wanted to attend SDWs but simply could not do so because of travel difficulties. Now, it seems that with the click of a button and some on-hand data, these students are within virtual reach.

For these reasons the SAASC is now shifting its focus towards a greater online presence. In addition to hosting physical SDWs, SAASC is aiming to record and publish content online, including SDW lectures and student presentations, making it immediately available to students and even the general public. With a greater online presence, SAASC is also able to host Webinars with live questions being posed to presenters by a virtual audience. Digging into the availability of digital resources, SAASC can publish content not only on the newly revamped SAASC website,⁹ but other social media platforms.¹⁰

⁹ Visit our SAASC website at [officialsaasc.wixsite.com/sass](https://www.officialsaasc.wixsite.com/sass).

¹⁰ Visit our Facebook page at <https://www.facebook.com/ASAPAsc/> and watch the interview with Mariette Harcombe and Kelita Shadrach of the SAASC on Episode 28 of Bones and Stones: <https://www.youtube.com/watch?v=5YTSnhDakZI>.

Here students will have unlimited access to a virtual archive of enrichment content to supplement the available university resources. As a first of its kind, SAASC is also launching Sassy-e (Southern African Archaeology Student Society E-learning) in 2020. The platform provides continuing education opportunities for students and those interested in archaeology through short courses and quizzes. In addition to video lectures, students will also have access to other resources, such as conference poster templates, PowerPoint presentations and a variety of interactive learning content.

Expanding our reach as an organisation

SAASC's function as a body that represents archaeology students is primarily achieved through the presence of the SAASC chair as the student representative on the ASAPA council. However, with the SAASC itself being a representative body, formal 'membership' of ASAPA is reserved to those who are elected to serve on council. In short, students have a representative body, but the representative body does not have formal members. In the light of this, the SAASC is proud to announce the formation of the Southern African Archaeology Student Society (SAASS), which will offer membership to archaeology students who are registered at a university within the SADC region. The SAASC will remain as a body (or rather a team) that organises content and events and interacts with students and engages with their achievements and their challenges within the academic environment.

At university level, student societies play an important role in integrating students in their academic environment (Gallagher & Gilmore, 2013). As a SADC regional student society, SAASS, which is not affiliated to any particular university, aims to increase greater student integration and development that provides students opportunities to expand their research skills, sharpen their leadership abilities and improve their employability. This will allow students to transition from their postgraduate studies to pursue their careers as young researchers at universities, in museums or as part of CRM.

Special notes of thanks

PAST: The Palaeontological Scientific Trust has graciously funded the annual SDWs since inception. They have been our primary funder and most prominent supporter in creating unique educational experiences for archaeological students from across the SADC. Their funding has enabled the SAASC to create an educational platform and networking opportunity for students from all walks of life, at different universities in various countries.

PGS Heritage: We would like to thank PGS Heritage for hosting the 2018 SDW in Mokhotlong, Lesotho. Not only did they provide us with an excellent venue

at their base camp, but team members also provided a number of lectures and facilitated practical activities, including field excursions to project sites in the area. The 2018 SDW represented the first workshop to include on-site enrichment experiences.

ArchSoc, Northern Branch: The Northern Branch of ArchSoc provided additional funding for the 2018 SDW through their grant awards programme since an international/cross-border initiative creates greater financial and logistical expenses.

The ASAPA Council: We would like to thank the council of the Association for Southern African Professional Archaeologists for their continued support. As a student organisation, we have learnt much from the advice given by council members pertaining to events organisation, financial planning and the management of a society in general.

Other sponsors and supporters: A special note of thanks is extended to various universities, organisations and businesses for providing funding, resources and equipment for the SDWs. These include the universities of the Witwatersrand, Pretoria and Cape Town, the South African Heritage Resources Agency, Digby Wells Environmental, Heritageworx, Hunyani Reptile Education and Breeding Centre, Safari Centre 4x4, Claw Safety Shoes and the Living Landscape Project.

Members of council, past and present: The SAASC is indebted to the members who have dedicated their time to the organisation of SDWs over the past seven years. The chairs (past and present), Matt Lotter, Tim Forssmann, Lu-Marie Fraser and Mariette Harcombe, would like to thank the following individuals for the roles they have played on council: Nthabiseng Mokoena, Simone Bradley, Jacqueline Jordaan, Rosa Moll, Peter Morrissey, Lesiba Phahladira, Antoine Rossouw, Nandipha Masemola, Enio Tembe, Suramya Bansal, Kelita Shadrach and Cherene de Bruyn.

Workshop presenters: A sincere note of thanks is extended to all presenters who have offered up their time and expertise to the SDWs. Not only did their input provide students with irreplaceable enrichment experiences, but their presence, collegiality and willingness to share knowledge and experiences on a first-hand basis broke down many barriers between students and working professionals.

References

- Gallagher, D & Gilmore, A. 2013. Social integration and the role of student societies in higher education: an exploratory study in the UK. *International Journal of Non-profit and Voluntary Sector Marketing* 18(4): 275–286.
- Menzies, JL & Baron, R. 2014. International postgraduate student transition experiences: the importance of student societies and friends. *Innovations in Education and Teaching International*, 51(1): 84–94.

ARCHSOC PRESIDENT AND VICE-PRESIDENT FOR 2020–2022

Professor Karim Sadr and Jean Gray start their terms

At a Zoom meeting during lockdown in May 2020, the Council of the South African Archaeological Society elected a new President and Vice-President for the period 1 July 2020 to 30 June 2022 from nominations received from the Northern, Western Cape and KwaZulu-Natal Branches. They replace Dr Gavin Whitelaw and Yvonne Viljoen whose terms of office ended in June.

Our new President is Professor Karim Sadr who has been a staff member in the School of Geography, Archaeology and Environmental Studies at the University of the Witwatersrand in Johannesburg since 2001 and was Head of the School from 2009 to 2014. Born in Teheran in 1959, he studied Anthropology at Southern Methodist University in Dallas, Texas, and graduated with a PhD in 1988. He came to South Africa as a Postdoctoral Fellow at the University of Cape Town in 1990 and went on to lecture at the University of Botswana in 1995 before joining Wits.



Professor Karim Sadr

The title of his doctoral thesis, 'The development of nomadism in Northeast Africa', began a long interest in the archaeology of early herders in desert landscapes, the transition from hunting to herding and latterly in precolonial stone-walled structures. He has been a Patron of the Northern Branch of the SA Archaeological Society since 2010 and has been a regular lecturer at Northern Branch functions and meetings.



Jean Gray

Our new Vice-President is Jean Gray who, with her husband Paul Gray, joined ArchSoc in Johannesburg in the early 1970s when an outing to Olifantspoort led by Prof. Revil Mason reinforced her interest in Iron Age archaeology that had begun some years before on a holiday visit to Zimbabwe. When the family moved to Cape Town, Jean completed a BA degree through the University of South Africa (UNISA) in the 1980s, majoring in history, ancient history and archaeology. With an interest in Classical Archaeology, she also participated in an archaeological excavation in Israel at Tel Dan under the auspices of UNISA, the Israel Department of Antiquities and Museums, and the Nelson Glueck School of Biblical Archaeology. In 1995/6, Jean enrolled for an Honours degree in archaeology at the University of Cape Town (UCT) and wrote her dissertation in historical archaeology on the location and structural make-up of the Wesleyan Mission in Cape Town's District Six. Not yet ready to relax, she registered for an MPhil degree at UCT in association with the University of Zimbabwe and graduated in 2008. Her thesis was on the settlement patterns and ceramics at two sites in the Mateke Hills in south-east Zimbabwe that were roughly contemporary with South African sites such as K2 and Mapungubwe, and the Zimbabwean sites of Gumanye, Chivowa Hill and Period III at Great Zimbabwe.

Jean has been a member of the Council of the South African Archaeological Society for some 20 years, first as a co-opted member and later representing Non-Branch Members. She has also served on the Western Cape Branch Committee since 2007, being Branch Treasurer since 2012, and has organised several highly successful archaeological excursions to sites from Limpopo to the southern Cape.

WHAT THE ARCHAEOLOGICAL RECORD REVEALS ABOUT EPIDEMICS THROUGHOUT HISTORY

Charlotte Roberts, Gabriel Wrobel and Michael Westaway

As a follow-up to the article on the worst epidemics and pandemics in history published in the April issue, this article by three bioarchaeologists specifically looks at the archaeological record of epidemics. The article appeared in *The Conversation* of 15 June.

The previous pandemics to which people often compare COVID-19 – the influenza pandemic of 1918, the Black Death bubonic plague (1342–1353), the Justinian plague (541–542) – do not seem that long ago to archaeologists. We are used to thinking about people who lived many centuries or even millennia ago. Evidence found directly on skeletons shows that infectious diseases have been with us since our beginnings as a species.

Bioarchaeologists like us analyse skeletons to reveal more about how infectious diseases originated and spread in ancient times. How did aspects of early people's social behaviour allow diseases to flourish? How did people try to care for the sick? How did individuals and entire societies modify behaviours to protect themselves and others? Knowing these things might help scientists understand why COVID-19 has wreaked such global devastation and what needs to be put in place before the next pandemic.

Clues about illnesses long ago

How can bioarchaeologists possibly know these things, especially for early cultures that left no written record? Even in literate societies, poorer and marginalised segments were rarely written about. In most archaeological settings, all that remains of our ancestors is the skeleton. For some infectious diseases, like syphilis, tuberculosis and leprosy, the location, characteristics and distribution of marks on a skeleton's bones can serve as distinctive 'pathognomonic' indicators of the infection. Most skeletal signs of disease are non-specific, though, meaning bioarchaeologists today can tell an individual was sick but not with what disease. Some diseases never affect the skeleton at all, including plague and viral infections like HIV and COVID-19. And diseases

that kill quickly do not have enough time to leave a mark on victims' bones.

To uncover evidence of specific diseases beyond obvious bone changes, bioarchaeologists use a variety of methods, often with the help of other specialists, like geneticists or parasitologists. For instance, analysing soil collected in a grave from around a person's pelvis can reveal the remains of intestinal parasites, such as tapeworms and round worms. Genetic analyses can also identify the DNA of infectious pathogens still clinging to ancient bones and teeth. Bioarchaeologists can also estimate age at death based on how developed a youngster's teeth and bones are or how much an adult's skeleton has degenerated over its lifespan. Then demographers help us draw age profiles for populations that died in epidemics.

Most infectious diseases disproportionately affect those with the weakest immune systems, usually the very young and very old, but the Black Death was indiscriminate: 14th century burial pits contain the typical age distributions found in cemeteries. In contrast, the 1918 flu pandemic was unusual in that it hit hardest those with the most robust immune systems, i.e. healthy young adults. COVID-19 today is also leaving a recognisable profile of those most likely to die from the disease, targeting older and vulnerable people and particular ethnic groups.

We can find out what infections were around in the past through our ancestors' remains, but what does this tell us about the bigger picture of the origin and evolution of infections? Archaeological clues can help researchers reconstruct aspects of socioeconomic organisation, environment and technology. And we can study how variations in these risk factors caused diseases to vary across time, in different areas of the world and even among people living in the same societies.

How infectious disease got its first foothold

Human biology affects culture in complex ways. Culture influences biology, too, although it can be hard for our bodies to keep up with rapid cultural changes. For example, in the 20th century highly processed fast food replaced a more balanced and healthy diet for many. Because the human body evolved and was designed for a different world, this dietary switch resulted in a rise in diseases like diabetes, heart disease and obesity.

Charlotte Roberts is Professor of Archaeology, Durham University.
Gabriel D Wrobel is Associate Professor of Anthropology, Michigan State University.

Michael Westaway is Australian Research Council Future Fellow, Archaeology, School of Social Science, University of Queensland.

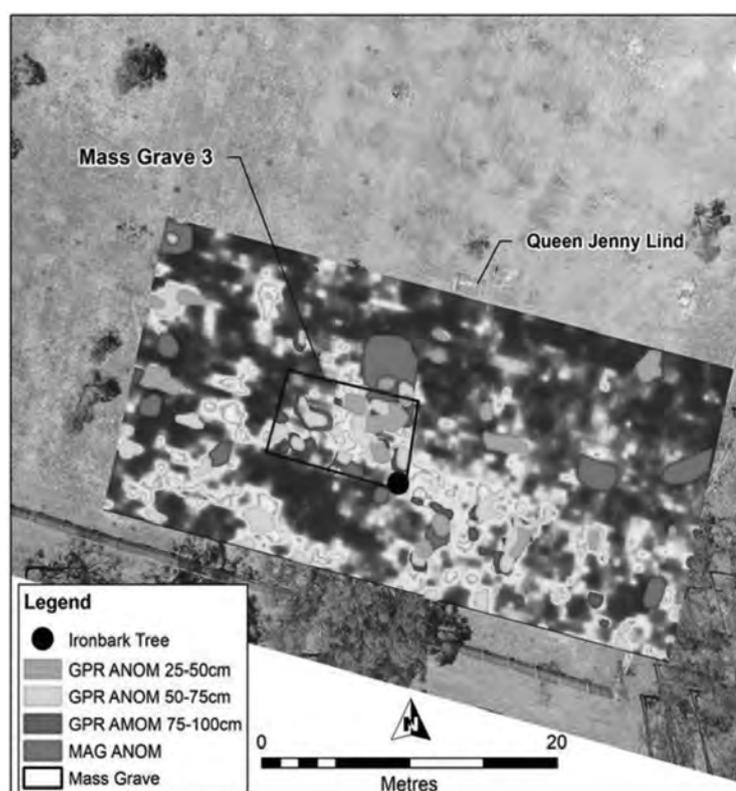
From a paleo-epidemiological perspective, the most significant event in our species' history was the adoption of farming. Agriculture arose independently in several places around the world beginning around 12 000 years ago. Prior to this change, people lived as hunter-gatherers, with dogs as their only animal companions. They were very active and had a well-balanced, varied diet that was high in protein and fibre and low in calories and fat. These small groups experienced parasites, bacterial infections and injuries while hunting, and occasionally fighting with one another. They also had to deal with dental problems.

One thing hunter-gatherers did not need to worry much about, however, was virulent infectious diseases that could move quickly from person to person throughout a large geographic region. Pathogens like the influenza virus were not able to spread effectively or even be maintained by small, mobile and socially isolated populations. The advent of agriculture resulted in larger, sedentary populations of people living in close proximity. New diseases could flourish in this new environment. The transition to agriculture was characterised by high childhood mortality in which 30 per cent or more of children died before the age of five.

And for the first time in an evolutionary history, different species of mammals and birds became intimate neighbours. Once people began to live with newly domesticated animals, they were brought into the life cycle of a new group of diseases called zoonoses that previously had been limited to wild animals but could now jump into human beings. Add to all this the stresses of poor sanitation and a deficient diet, as well as increased connections between distant communities through migration and trade, especially between urban communities, and epidemics of infectious disease were able to take hold for the first time.

Globalisation of disease

Later events in human history also resulted in major epidemiological transitions related to disease. For more than 10 000 years the people of Europe, the Middle East and Asia evolved along with particular zoonoses in their local environments. As people lived alongside particular animal species over long periods of time, a symbiosis could develop, as well as immune resistance to local zoonoses. But at the beginning of modern history, people from Europe began traveling across the globe, taking with them a suite of 'Old World' diseases that were devastating for groups that had not evolved alongside them. Indigenous populations in Australia, the Pacific and



Ground penetrating radar shows mass graves from the small Aboriginal settlement of Cherbourg in Australia, where 490 out of 500 people were struck down by the 1918–1919 influenza pandemic, with about 90 deaths. Image: Kelsey Lowe, CC BY-ND.

the Americas had no biological familiarity with these new pathogens. Without immunity, one epidemic after another ravaged these groups. Mortality estimates range between 60 and 90 per cent.

The study of disease in skeletons, mummies and other remains of past people has played a critical role in reconstructing the origin and evolution of pandemics, but this work also provides evidence of compassion and care, including medical interventions such as trepanation, dentistry, amputation and prostheses, herbal remedies and surgical instruments. Other evidence shows that people have often done their best to protect others, as well as themselves, from disease. Perhaps one of the most famous examples is the English village of Eyam, which made a self-sacrificing decision to isolate itself to prevent further spread of a plague from London in 1665. In other eras, people with tuberculosis were placed in sanatoria, people with leprosy were admitted to specialised hospitals or segregated on islands or into remote areas, and urban dwellers fled cities when plagues came.

As the world copes with yet another pandemic, the archaeological and historical record are reminders that people have lived with infectious disease for millennia. Pathogens have helped shape civilisation and humans have been resilient in the face of such crises.

AFRICAN ROAN ANTELOPE, ETHIOPIAN 'UNICORNS' AND EUROPEAN MEDIEVAL ART

J Francis Thackeray

Unicorns depicted in late medieval art in Europe typically have long straight horns. Such images in tapestries or stained glass windows were inspired by the tusks of narwhals (*Monodon monoceros*) from Greenland, brought to Europe as isolated fully adult male canine teeth (from the left side of the skull), typically 2 m in length with a spiral growth structure. They were sold at extraordinarily high prices, based on the claim that they were the actual horns of the fabled beast with one horn with medicinal properties. However, in 1638 a Danish physician named Ole Worm recognised the truth that the 'horns' were actually narwhal tusks, and in 1646 Sir Thomas Browne ridiculed the unicorn in a book entitled *Pseudodoxia Epidemica*, exposing it for what it really was (Shepard 1979).



Fig. 1: The roan antelope (*Hippotragus equinus*). Photo: Jess Thompson.

Initial beliefs associated with unicorns can be traced back to descriptions by the Greek historian Ctesias. In 342 BC Aristotle gave an account in *History of Animals*. In medieval Europe, such descriptions gave rise to perceptions of a fierce one-horned animal having the body of a horse (equid), a goat-like beard (caprid) and cloven feet (bovid). At least some

Professor Francis Thackeray is an Honorary Research Associate of the Evolutionary Studies Institute, University of the Witwatersrand, Johannesburg. francis.thackeray@wits.ac.za.

medieval beliefs associated with unicorns had an Asian origin. The Chinese one-horned *qilin* or *kilin* was described as having the body of a deer (cervid), the head of a lion (carnivore) and scales (reptile). Marco Polo gave a description of a unicorn that corresponds to a rhinoceros. At least some unicorns depicted in medieval art in Europe have long curved horns. It is clear that these were not inspired by narwhals from the Arctic or by the straight-horned oryx from Africa and Arabia. Here I question whether such European images of the unicorn were inspired partly by the African roan antelope, *Hippotragus equinus*.

The roan

Roan antelope have a horse-like body, hence the species name *H. equinus* (Fig. 1). They have long curved horns; are widely distributed in woodland savanna in west, central, east and southern Africa; and are highly aggressive when wounded. They were first recorded and illustrated by explorers in the early 19th century during an expedition into the interior of South Africa led by William Somerville (Bradlow and Bradlow 1979). A single roan antelope was initially sketched by Daniell (1804) in a rufous colour (Roberts 1951), indicating that it was bearded (Fig. 2).

When the drawing was published in 1804, it was coloured grey-blue, influenced perhaps by a

knowledge of the so-called 'bloubok' (*Hippotragus leucophaeus*), a related species (now extinct) known from the southern Cape. Daniell's image of the roan was considered by some naturalists to be so much like a goat that it was classified in 1827 as *Capra barbata*, distinct from *Capra ibex* which in Africa is found only in the mountainous areas of north-eastern regions. Both roan and ibex have long curved horns and were apparently perceived to be analogous animals in belief systems in prehistory (Thackeray 2014).



Fig. 2: Roan antelope depicted by Samuel Daniell (1804) in South Africa. Reproduced with permission from Alessandra Maggs (private collection).

Despite a reference to ‘the acknowledged fidelity of the figures designed by Mr D’ (Roberts 1951), the goat-like ‘beard’ depicted by Daniell is curious. There is a probable explanation. Dorst and Dandelot (1978) note that ‘longish dark hairs, forming a kind of mane’ can occur under the neck. The length of such hairs would be greater in relatively old adults. This could have contributed to Daniell’s perception of a drooping neck-mane and a dark ‘beard’ on the animal that had the local name *tackhaitze*. In Latin, the accepted scientific name for the genus, *Hippotragus*, means ‘horse-goat’.

‘Unicorns’ in Ethiopia

A Portuguese Jesuit missionary, Jeronimo Lobo (1593–1678), gave two accounts of ‘unicorns’ in Ethiopia. His first report was translated from a French version by Samuel Johnson (1739), stating that their ‘shape is that of a beautiful horse, of a bay [red-brown] colour with a black tail which in some provinces is long, in others very short; some have long manes’. In all of these respects, the description corresponds to the horse-like red-brown (‘roan’ or ‘rufous’) colour of the roan antelope with prominent manes and black tails. Long ‘drooping’ manes in Lobo’s account are interesting in the sense that they would correspond to Daniell’s (1804) record of the same species of an adult roan in southern Africa (Fig. 2).

Lobo’s second account of a ‘unicorn’ in Ethiopia was published in an English translation by Peter Wyche (1669). It referred to Portuguese explorers who had seen the animal ‘in a little valley encompassed with thick woods’ where ‘their horses grazed on the good grass’. In terms of habitat, this would correspond to the fact that roan are grazers and are typically distributed in fertile woodland savanna. The ‘unicorn’ in this instance was said to be ‘a perfect horse of the

same colour, hair and shape’ as the animal that was described initially. It was said to have a straight horn. The relatively short horns of young roan are only slightly curved and when seen at a distance, the skittish animal could easily have been perceived by the explorers (and others) as having had a single straight horn.

In 1682 Job Ludolphus gave a separate account of a unicorn in the *New History of Ethiopia*. The animal was ‘both strong and fierce, called *Arweharis*, which signifies one horn. This beast resembles a goat, but very swift of foot. Whether it be the Monoceros of the Ancients I leave to the scrutiny of others.’

Discussion

As demonstrated by this study, historical evidence from Ethiopia strongly suggests that some ‘unicorns’ had a basis in observations of roan. It is not unreasonable to speculate that isolated horns of this antelope could have been transported over considerable distances, as in the case of elephant tusks (Kendrick 1937). Verbal accounts could have served to distribute the notion of a unicorn that resembled roan in some respects, especially in terms of the shape its horn.

A ‘Persian’ unicorn in an illustrated manuscript associated with al-Muṭahhar ibn Muḥammad Yazdī (c. 1184 AD) has the body of a horse that is reddish-brown in colour. Its long, curved brown horn could be considered to have a keratinous ridged sheath. Apart from the single horn, all of these features bring to mind a roan outside its natural range of distribution.

The long curved horn of a ‘Monoceros’ unicorn in the *Bestiary* (c. 1183 AD, from York or Lincoln in England), curated at the Morgan Library and Museum in New York (MS M.81 fol. 12v), is also remarkably like that of a roan. The animal is wounded.

As mentioned earlier, unicorns were believed to have been fierce. Roan antelope can certainly be fierce, particularly when wounded, and concepts related to wounded roan evidently contributed to the development of beliefs over a wide area of the African continent, probably with considerable time depth. Within the last 3 000 years, sorghum was introduced from north-east Africa to west Africa and it is in Mali where certain agricultural beliefs (and art) traditionally relate to roan in the context of an agency called *Chiwara* or *Tyi Wara*, the latter being etymologically linked to ‘wounded wild animal’ or ‘wounded roan’ (Thackeray 2005; 2014). Also within the last 3 000 years, domesticated sheep were introduced from north-east Africa to the sub-continent

in association with ancestral Khoi populations who (in southern Africa in the 19th century) believed in a 'supreme being' called *Tsui //khoab*, which can be etymologically traced to 'wounded roan' (Thackeray 2005).

Within the last 2 000 years, Bantu-speaking peoples moved from west Africa to southern Africa and it is among Bantu-speakers in South Africa that we find words for roan that relate to wounding and other concepts. For example, the form *-hlaba* is found in North Sotho words for the antelope and to stabbing. Further to this, I have noted the following (Thackeray 2005):

'isiXhosa words incorporating the form *hlaba* as in *ukuhlaba* refer to making a mark, to stab, pierce or kill (McLaren 1984) ... Words incorporating the form *kwala* or *kuala* refer not only to roan, as in the seTswana term *kwalata* (Walker 1981), but also to writing [making a mark], as in a Basarwa Bushman term *kwala* (Bleek 1956), and to engraving in a (probably Tswana) word *lokuala* (cf. *lokwala*), referring to rock engravings in the interior of South Africa (Moffat, cited by Stow 1905: 27)'.

This linguistic evidence points to conceptual links between roan antelope, wounding, stabbing (thus making a mark), writing and prehistoric rock art in South Africa. Such links can also be found in words incorporating the form *taka*, as in *tackhaitse*, which was recorded by Daniell when referring to roan antelope (Fig. 2), while *taka* means 'to make a coloured mark' in South Sotho spoken in areas where polychrome rock paintings are common.

At Logageng in South Africa there is evidence of a ritual in which a person appears to have behaved like a roan antelope that had been wounded. This event, and rituals associated with the *Tyi Wara* ('wounded roan') in West Africa, may have had a common origin, perhaps in areas of north-eastern Africa where sorghum was first domesticated at least 3 000 years ago (Thackeray 2005).

In the light of observations presented in this study, I propose as a hypothesis that concepts associated with roan contributed not only to belief systems and art in Africa, originating perhaps in north-eastern regions of the continent, but also to art in areas where roan did not occur, as in the case of the 'Persian' unicorn, originating perhaps from concepts held in north-east Africa. In the case of medieval representations of unicorns in England, one example is the wounded Monoceros with a long curved horn in the *Bestiary* of 1183. This hypothesis need not be considered too outrageous, recognising that Shepard (1979) has previously considered the possibility that at least some European medieval concepts associated with unicorns originated from north-east Africa.

This study serves to direct attention towards the roan

antelope (with their long curved horns) as a possible source of inspiration contributing to some extent to the development of at least some examples of *early* medieval art in Europe, just as narwhals (with their long straight tusks) contributed to a large extent as an inspiration for *late* medieval art on the continent and in England.

Acknowledgements

I thank Jean-Michel Massing and John Cunnally for commenting on a previous version of this article that is based on ideas I have explored within a period of 30 years, with support from the National Research Foundation and the Andrew Mellon Foundation.

References

- Al-Muṭahhar ibn Muḥammad Yazdī. 1184. *Wonders of the world*. Medical Historical Library in the Harvey Cushing/John Hay Whitney Medical Library, Yale University. <https://za.pinterest.com/pin/467600373782360346>.
- Bestiary*. 1183. Illuminated manuscript. A wounded unicorn with a long, curved horn. The Morgan Museum and Library (B1 350 B MS M.0081). <http://ica.themorgan.org/manuscript/page/5/77019>.
- Bradlow, E & Bradlow, F. 1979. *William Somerville's Narrative of His Journeys to the Eastern Cape Frontier and to Lattakoe 1799–1802*. Cape Town: Van Riebeeck Society.
- Daniell, S. 1804. *African Scenery and Animals*. London: Daniell.
- Dorst, J & Dandelot, P. 1978. *A Field Guide to the Larger Mammals of Africa*. London: Collins.
- Johnson, S. 1735. *A Voyage to Abyssinia*. Father Jeromo Lobo, as translated by Samuel Johnson. London.
- Kendrick, TD. 1937. The Horn of Ulph. *Antiquity* 11: 278–282.
- Ludolphus, J. 1682. *A new history of Ethiopia*. London: Gent.
- Roberts, A. 1951. *The Mammals of South Africa*. Trustees of 'The Mammals of South Africa' Book Fund.
- Shepard, O. 1979. *The Lore of the Unicorn*. New York: Harper and Row.
- Thackeray, JF. 2005. The wounded roan: a contribution to the relation of hunting and trance in southern African rock art. *Antiquity* 79: 5–18.
- Thackeray, JF. 2014. Roan, ibex and art in Africa, southern Arabia and Near Eastern prehistory. *The Digging Stick* 31(2): 17–19.
- Wyche, P. 1669. *A Short Relation of the River Nile*. London: Royal Society.

Danish king Bluetooth's treasure found

A trove found in Germany may have belonged to king Harald Bluetooth, who brought Christianity to Denmark. A hunt for treasure on Rügen in the Baltic led to the discovery of a piece of silver. A 400 m² dig found a hoard believed to be linked to the king Harald Gormsson, known as Harry Bluetooth, who reigned from around AD 958 to 986. The find includes braided necklaces, pearls, brooches, a Thor's hammer, rings and some 600 chipped coins of which 100 date to Bluetooth's era, when he ruled over what is now Denmark, northern Germany, southern Sweden and parts of Norway. The oldest coin is a Damascus dirham from 714, while the most recent is a penny dating to 983. Bluetooth fled to Pomerania after a rebellion led by his son Sven Gabelbart and died in 987.

AFP, 16/04/2018

CORONAVIRUS HEALTHCARE COMMUNICATION IN ENDANGERED LANGUAGES OF SOUTHERN AFRICA

Report on the use of funds donated by ArchSoc

Megan Laws, Kerry Jones and Megan Biesele

The coronavirus (COVID-19) pandemic of 2020 has caused social and economic distress worldwide (Sohrabi et al. 2020). In the wake of government regulations, national lockdowns and isolation, speakers of minority languages are at risk of being excluded from important health care communication (Sood 2020).



Fig. 1: The Namibian team, led by /Ai!ae Fridrick /Kunta, demonstrate safe hand-washing and share healthcare communication on COVID-19 symptoms and treatment

In an attempt to solve this exclusion, the Kalahari Peoples Fund (KPF) initiated an international campaign to provide health care information in the endangered languages of southern Africa. With generous donations made by the South African Archaeological Society and the Indigenous Peoples of Africa Co-ordinating Committee (IPACC), posters and audio/visual materials were produced in English, Afrikaans and several minority languages spoken

in Botswana, Namibia and South Africa, namely OtjiHerero, which includes the Himba dialect, Northern Ju|'hoansi, Naro, G||ana, Omaheke Ju|'hoansi, Khwedam, Khoekhoegowab and !Xun.

This work was spearheaded by a team of volunteers based in the Nyae Nyae Conservancy. The team (Fig. 1) was made up of members of the Ju|'hoan Transcription Group. Led by /Ai!ae Fridrick /Kunta, the group has since 2003 worked with the government of Namibia to translate important educational and healthcare communication into Ju|'hoansi. In conjunction with regional and international partners, including Kerry Jones (who also coordinated efforts in South Africa), Megan Laws, Bruce Parcher and Alexandra Parrs, the team began doing village visits early on in the pandemic to share information and to deliver the supplies needed (including face masks and food) to help people isolate.

We have added to these efforts by producing mother-tongue language posters and audio/visual materials. The latter help those with low levels of literacy and are easier to share quickly using platforms such as WhatsApp or Facebook, or over Bluetooth where connectivity is low.

Supporting Ju|'hoan speakers

ArchSoc's donation has funded our work by supporting Ju|'hoan speakers across the Omaheke region in Namibia (see Dieckmann et al. 2014). These communities are particularly vulnerable as they live either on farms or in the boundaries between them with little access to healthcare and other forms of appropriate support. With high incidences of tuberculosis and poor food security, they are particularly vulnerable should COVID-19 reach them. Working with a group of Ju|'hoan speakers from Drimiopsis who are committed to improving mother-

Dr Megan Laws is a fellow in the Department of Anthropology at the London School of Economics and Political Science. meganlaws@gmail.com

Dr Kerry Jones is a postdoctoral fellow at Rhodes University and the Director of Africa Tongue, a privately owned company offering services in language policy. It specialises in endangered languages in southern Africa.

Dr Megan Biesele is the director of Kalahari Peoples Fund, a non-profit organisation formed for the benefit of the San and other peoples of the Kalahari Desert region of southern Africa.



Fig. 2: Johannes Abuseem of the Omaheke Ju/'hoan Transcription Group producing audio recordings of relevant healthcare communication in the group's studio in Drimiopsis

tongue literacy within the region, guidance provided by the World Health Organisation (WHO) on how to keep safe from COVID-19 was adapted to suit the local context. The text was then approved for dissemination by the Ministry of Health and Social Services, translated into Ju/'hoansi and produced as audio recordings for dissemination over mobile phones and social media (Fig. 2). The team in Drimiopsis also organised for the posters to be printed and laminated locally to minimise the risk of infection and then disseminated these within communities of Ju/'hoan speakers across the region.

The team started in Goresseb (Otjinene), a small village 270 km north-east of Windhoek and home to some 20 Ju/'hoan households in a predominantly Damara-speaking area. Since no institutional or project support is offered to residents in the region, the opportunity to receive healthcare communication in their mother tongue was particularly well-received (Fig. 3).

The team then moved to Epukiro, and on to a small village called 'Post 3', about 100 km north of Gobabis. Post 3 is home to a small number of Ju/'hoan families, many of whom work as occasional labour for stock herders. The situation was particularly difficult here as restrictions posed by the lockdown had threatened food security further and left the local population without rations during the dry winter months.

Next was Epako, a town just outside the centre of Gobabis, where they met with community members at local schools and churches to disseminate posters and share audio-visual materials (Fig. 4). While the

region is near to healthcare facilities and easy to reach, the residents are especially vulnerable since they live in exposed shelters and are reliant on temporary manual work that regularly brings them into contact with potential carriers of the virus in the



Fig. 3: Team leader, Tshidiso Moletsane, shares healthcare communication with Ju/'hoan families in Epukiro Post 3

busy, administrative centre of Gobabis. Many of the outbreaks in Namibia, outside the Erongo region, have been in towns such as Gobabis, which are thoroughfares between South Africa and Windhoek.

Then the team visited Skoonheid, home to the Ju/'hoan Traditional Authority for the Omaheke region,



Fig. 4: A resident in Epako reads the Ju/'hoan text while listening to the associated audio recording



Fig. 5: Skoonheid residents gathered in the local clinic move outside when numbers grew and people were unable to distance socially

Chief Frederick Langman and about 65 Ju|'hoan households. Large numbers of residents turned out for the meeting (Fig. 5) and expressed their concerns about the risks that the virus posed to their health and to problems of food security in the region. Many of the region's residents depend on tourism and have seen these sources of income collapse.

The team was due to visit Donkerbos and Sonneblom in August, but this was postponed following the reinstatement of the national lockdown after a rise of COVID-19 cases in Windhoek and the Erongo region. The communities have been contacted by telephone and will be followed up on when the lockdown has been lifted. Further funds have been applied for to continue providing support in the way of face masks, facilitating meetings with local and

regional organisations and community members, and distributing updated healthcare communication.

Breakdown of use of NAD/ZAR 10 000 in funding

Translation of WHO text into	
Ju 'hoansi (Omaheke)	NAD 2 000
Printing of 100 posters	NAD 3 000
Fuel/maintenance	NAD 5 000

Acknowledgements

The authors would like to thank the South African Archaeological Society and Kalahari Peoples Fund for funding this work. We would also like to thank Rev. Tshidiso Moletsane and his team; Johannes Abuseem, Fron Ita Qutas, Willia Jakob, Christof Timi, Frans Chapman and Martha Chapman for translating, printing and disseminating the information. This work would not have been possible without the support of |Ail'ae Fridrick |Kunta, the Ju|'hoan Transcription Group and the rest of the team in Tsumkwe; Kelly Laws who designed and produced the posters and audio/visual materials; Ben Begbie-Clench who assisted the team throughout the process; Samuel Marks who provided the illustrations; and the government of Namibia who edited the outputs and provided extensive support. Finally, we would like to thank the residents of Drimiopsis, Donkerbos and Sonneblom, Epukiro (Post 3), Gobabis, Otjinene and Skoonheid for their hospitality and cooperation.

References

- Dieckmann, U, Thiem, M, Dirx, E & Hays, J. 2014. *Scraping the Pot: San in Namibia two decades after Independence*. Windhoek, Land, Environment and Development Project of the Legal Assistance Centre and Desert Research Foundation of Namibia.
- Sohrabi, C, Alsafi, Z, O'Neill, N, Khan, M, Kerwan, A, Al-Jabir, A, Losifidis, C & Agha, R. 2020. World Health Organisation declares global emergency: A review of the 2019 novel coronavirus (COVID-19). *International journal of surgery* 76, 71–76. <https://doi.org/10.1016/j.ijssu.2020.02.034>.
- Sood, S. 2020. Psychological effects of the Coronavirus disease 2019 pandemic. *Research and Humanities in Medical Education* 7, 23–26.

WORLD ARCHAEOLOGY

Spain logs hundreds of shipwrecks

The treacherous waters of the Americas had their first taste of Spanish timber on Christmas Day 1492, when Christopher Columbus' flagship, the Santa María, sank off the coast of what is now Haiti. Over the following four centuries, as Spain's maritime empire swelled, peaked and collapsed, the waves devoured hundreds of ships and thousands of people, swallowing gold, silver and emeralds, and scattering spices, mercury and cochineal. Today, two archaeologists and a naval historian working for the Spanish culture ministry have finished the initial phase of a project to catalogue the wrecks. They have logged 681 shipwrecks off Cuba, Panama, the Dominican Republic, Haiti, Bermuda, the Bahamas and the US Atlantic coast. The inventory runs from the sinking of the Santa María to July 1898, when the Spanish destroyer Plutón was hit by a US boat off Cuba, heralding the end of the Spanish-American war and the twilight of Spain's imperial age.

The team has spent five years scouring archives in Seville and Madrid. It found that 91,2 per cent of ships were sunk by severe weather, 4,3 per cent ran on to reefs or had other navigational problems, 1,4 per cent were lost to naval engagements with British, Dutch and US ships, and 0,8 per cent were sunk in pirate attacks. Archaeologists have located the remains of fewer than a quarter of the vessels on the inventory to date.

The cargo the outbound ships carried indicated a massive amount of trade. But it was not just about products and trade. These ships also carried ideas. A lot of boats were loaded with religious objects – relics, decorations and even stone to build churches. The findings help to explain how Spain succeeded in enriching itself for centuries. As well as the many tonnes of mercury sent to the new world to be used in extracting gold and silver, boats were carrying clothes for slaves and weapons to put down local rebellions.

Sam Jones, *Heritage Portal*, 7/3/19

OBITUARY

Professor Revil Mason 1929–2020

With the sad death of Professor Revil Mason on 23 August 2020, South Africa lost the last member of a generation scholars that included such other luminaries as ‘Peter’ C van Riet Lowe, Guy Gardiner, Raymond Dart, Phillip Tobias, James Kitching, who during the mid and late 20th century transformed our understanding of pre-colonial Africa.

Revil’s life work traversed vast regions of the subcontinent and revealed thousands of years of the ancient past, including his pioneering work on the rich archaeological history of what is now the Magaliesberg Biosphere Reserve. He was among the first to excavate Iron Age and Stone Age sites at Olifantspoort, Kruger Cave, Uitkomst and Broederstroom and, together with his colleague, Robbie Steel, investigated the extraordinary Late Stone Age rock engravings in the Magaliesberg and described for the first time the details of the iron-smelting furnaces of the Early and Late Iron Age industries. He is a former President of ArchSoc.

Revil was born in Johannesburg 91 years ago, the great-grandson of a Scottish settler who came to the country in 1849. He was a dedicated South African in spirit, committing every aspect of his work to the building of a just society. After schooling at St John’s College during the WW2, he continued his education at the University of the Witwatersrand, where he earned a Chamber of Industries bursary and graduated with a B.Com degree with top honours, including the Chamber of Commerce Prize and the Alexander Aiken Medal. However, no sooner had he received his degree with such accolades, he found that his real love lay in archaeology and went to study at the University of Cape Town under the father of South African archaeology at that time, AJH Goodwin. He later applied his knowledge of statistics from his commerce degree to pioneer new methods of assessing archaeological discoveries. Over the next four decades he conducted his extensive research under the auspices of Wits University as director of the Archaeological Research Unit.

His first major publication, *The Prehistory of the Transvaal*, was synthesised from his Doctoral thesis and was described by Raymond Dart as ‘the first single source for average intelligent individuals to gain direct and detailed insights into the entire panorama of human prehistory as revealed by our own immediate countryside’. That pursuit of a wider public understanding of our pre-colonial past persisted throughout his career. He made many remarkable discoveries, but his work was not limited



Photo: Heritage Portfolio

to the excavation of artefacts; he saw the relevance of archaeology in a broader picture of trans-cultural heritage in a multi-racial country. It was a way of interpreting a full and comprehensive history of South Africa that could transcend entrenched prejudices. He tried constantly to have pre-colonial history introduced into school curricula based on scientific archaeological evidence. His views were adventurous and sometimes unpopular among the proponents of ‘white’ historical interpretation imposed under National Party education, and they also conflicted with the rise of Marxist history that was prevalent at Wits at the time.

When he retired in 1988 he published four massive volumes that embraced much of his archaeological findings over 40 years: *Cave of Hearths*, his work at Makapansgat, *Kruger Cave*, an exceptionally rich site in the Rustenburg area, *Origins of Black People of Johannesburg and the Southern Western Central Transvaal, 350–1880*, an enormous tome covering many of the important archaeological sites he had excavated, and *South African Archaeology 1922–1988*, a detailed summary of archaeological developments through his lifetime, which is almost an autobiography of his own illustrious career.

He then amazed his friends by cycling for 1 600 km through Asia and thereafter down the length of the USA from Canada to Mexico. But he continued to retain his interest in the study of the past, visiting ancient heritage sites both in this country and abroad, always emphasising the imperative need to preserve these sites from damage and degradation. Revil’s wide perspective of our past was the critical component of his full and extraordinary life, and his contribution to a better understanding of our country is the immeasurably valuable legacy he has left to us and subsequent generations. **Vincent Carruthers**

MILK-BASED PAINT MADE IN SOUTH AFRICA 49 000 YEARS AGO

Middle Stone Age inhabitants on South Africa's north coast created a milk and ochre mixture 49 000 years ago that was probably used as body paint or for rock painting, a study has found. While ochre has been discovered at many archeological sites in the country from 125 000 years ago, this is the first time that a milk-and-ochre paint has been found. The milk was used to bind the powdered ochre into paint.

The substance was discovered while analysing a small flake of dolerite found in the Sibudu Cave in KwaZulu-Natal, about 40 km north of Durban, an excavation directed by Prof. Lyn Wadley of Wits University. Co-author Paola Villa, curator of the University of Colorado's Museum of Natural History, said in a media release that the ancient site was occupied by 'anatomically modern humans' from roughly 77 000 to 38 000 years ago.

'This surprising find establishes the use of milk with ochre well before the introduction of domestic cattle,' she said. Cattle were domesticated in South Africa

between 1 000 and 2 000 years ago. According to Villa, the milk was probably obtained by killing a lactating buffalo, eland, kudu or impala. It could even have come from the now extinct 'giant buffalo', which had a horn span of more than 3 m.

While there are no recorded instances of milk being used to bind ochre pigments as a body paint in Africa, Villa said the modern Himba people of Namibia mixed ochre with butter as a colouring agent for skin, hair and leather clothing. The mixture could also have been used for rock art. The oldest confirmed rock paintings on the continent are those of the Apollo 11 rock shelter in Namibia. Radiocarbon analysis has dated these paintings to 27 000 years ago, about 20 000 years after the milk-and-ochre mixture was produced. 'Only further research into pigments and binders of rock art in South Africa will allow us to identify similarities and differences that may support one hypothesis over the other,' the study's authors conclude.

PLoS ONE

The South African Archaeological Society

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.

The Society was founded in 1945 to promote archaeology through research, education and publication. It is a non-profit organization – Registration No. 024-893-NPO.

Cape Town head office: PO Box 15700, Vlaeberg, 8018.
T: +27 (0)21 762 7347, 072 635 2815. F: +27 (0)866 155 874.
archsoc@iziko.org.za. www.archaeology.org.za.

Northern Branch: PO Box 41050, Craighall, 2024
Membership Secretary: Romy Parsons
072 784 7781
romy.parsons@draglobal.com
www.archaeology.org.za

Western Cape Branch: PO Box 426, Muizenberg, 7950
Chairperson: Yvonne Viljoen
021 788 5620
yv3@mweb.co.za

Trans-!Gariep Branch: David Morris
053 839 2706
dmorris@museumsnc.co.za

KwaZulu-Natal Branch: c/o KZN Museum, P/Bag
9070, Pietermaritzburg, 3200
Secretary: Barbara Dunn
031 209 1281
dunn@camsol.net

The Society produces the following publications:

- **South African Archaeological Bulletin**, a scientific publication of current research in southern Africa – twice a year.
- **The Digging Stick**, the Society's general interest magazine – three issues a year.
- **Goodwin Series**, an occasional publication on a specific field of archaeological interest.

Subscription rates for 2020 are as follows: South Africa: Ordinary – R335; Joint/Family – R355; Junior members – R230. Africa ordinary – R395; Overseas ordinary – R675. Institutions: Local and African – R675; Overseas – R1 375.

The Digging Stick

Editor and advertising: Reinoud Boers
PO Box 2196, Rivonia, 2128
Tel/fax: 011 803 2681
Cell: 082 566 6295
fox@boers.org.za
Layout: Leonard Mafunga
Printer: TVaal Johannesburg