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IRON AGE SETTLEMENTS OF THE MPUMALANGA ESCARPMENT: SOME ANSWERS BUT MANY QUESTIONS

Tim Maggs

Most of us will have, at some time or another, driven along the route between Gauteng and Nelspruit. As a child growing up in Johannesburg in the 1950s, I can remember the winding dirt roads and the inevitable punctures, the flooded drifts and the warnings of mambas – images that will for ever pervade my concept of the Mpumalanga (formerly Eastern Transvaal) Escarpment. As a bright-eyed and bushy-tailed archaeology student in Cape Town in the 1960s, I still felt a hankering for this grand escarpment country, but was totally taken up with, initially, Western Cape rock art and later the Free State Iron Age. So I never really got to grips with the richness of the Escarpment landscape. But if you, like me, have caught the bug, you may have noticed that as you drive over the Highveld watershed and start the gradual descent towards Machadodorp (that town of many punctures!), some stone ruins start to appear on the valley sides. Beyond Machadodorp, as the valleys get steeper and the Escarpment starts to bite deeper into the landscape, whole hillsides of terracing appear to the earnest observer.

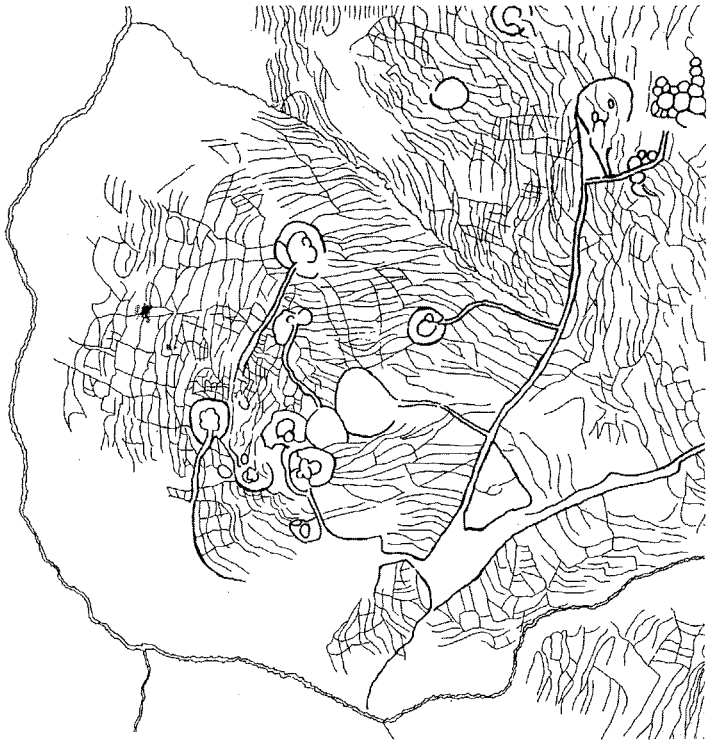

Fig 1: Vast amounts of stone walling and agricultural terracing. The area shown is about 1,5 km across.

The modern route cuts through the centre of what I will argue is the most detailed and interesting archaeological footprint of any pre-colonial farming society in South Africa. Yet the area has seen surprisingly little serious research by archaeologists in recent years. In view of the current renewed interest in the last 500 years of

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South African history, with its multi-disciplinary research initiative, I consider that the time has arrived for a thorough reassessment.

We need to start with a summary of the existing published information, which provides a broad, though rather shallow, context for these settlements. There is some further unpublished information arising out of my own interest in the area over several decades, though never amounting to a full research project. In combination, these provide the 'some answers' of the title. Arising out of these I put forward some ideas towards a different framework of interpretation, which poses possible questions for future research.

Previous work

Earlier work, particularly that of Evers (1975) and Collett (1982), has shown that the Mpumalanga Escarpment settlements fit broadly into the by now well-known phenomenon of stone-built settlements of black, agriculturist communities that flourished in many grassland areas of South Africa in the past 500 years. The homestead layout falls broadly into Huffman's Central Cattle Pattern (Huffman 2004), while the pottery is clearly Moloko and therefore fits fair and square within the range of Sotho-Tswana pottery styles (Collett 1982). Other aspects of the material culture are typically Late Iron Age (LIA), as is the basic economy, with evidence of cattle and small stock, as well as the African cultigens *Sorghum* and *Vigna* ('cow peas') (Collett 1982). Evidence of smelting seems quite rare, which is not surprising in a predominantly grassland environment.

The chronology remains imprecise, partly because of the paucity of fieldwork and partly because radiocarbon dating itself becomes of limited value for samples younger than about AD 1600. The few available dates do, however, suggest that these settlements flourished within the last 400 years (Evers & Vogel 1980).

The distribution of the settlements is relatively easy to establish as they show up well on aerial photos. They occur in a dense cluster along the Escarpment from Ohrigstad in the north, through Lydenburg and Machadodorp, to Carolina in the south, a distance of 150 km. More scattered sites spread from this main area eastwards down the Komati valley and upper tributaries of the Crocodile River, reaching the upper limits of Bushveld country, although most sites are in grasslands.

The built settlement pattern

Visually the most striking feature is the vast amount of stone walling, not only for homesteads but also the network of linking roads, and the huge areas of agricultural terraces (Fig 1). For pre-colonial South Africa the road systems are by far the longest and most complex, while the terraces represent, apparently, the only field systems to have survived from pre-colonial times.

The roads have stone walls on each side and they form a network that connects the homesteads with the open veld, controlling the movement of livestock through the terraced and therefore cultivated area. The complex terracing has yet to be studied in any detail. Some fields are marked by no more than a single or double row of stones, but there are some cases where substantial walls a metre or more in height have been built. The settlements normally consist of an extensive area of terracing, which can be up to four or more kilometres long, within which homesteads and roads are scattered.

The homesteads at first glance seem familiar in a LIA context, with livestock enclosures in the centre, often served by a road (Fig 2). These are surrounded by the domestic spaces, which are in turn often enclosed by an outer wall. Excavations have shown that houses were built in these domestic areas. Today they are identified by paved or dagha floors, sometimes with fire-bowls and trios of fire-stones preserved (Evers 1975, Collett 1982).

Apart from the ruins themselves, we can get additional information on the pattern of the homesteads, since the inhabitants often made quite detailed rock engravings depicting settlement plans (Maggs 1995). These are particularly

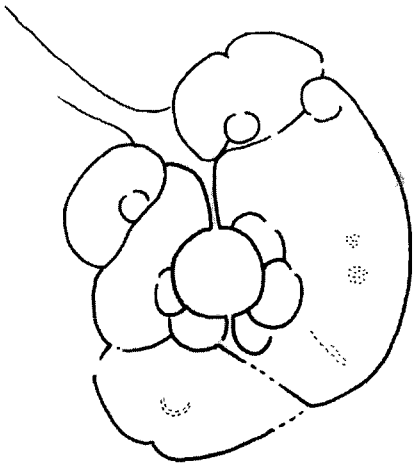

Fig 2: Typical LIA homestead with road at the entrance. This structure is about 65 m across.

well represented on the farm Boomplaas near Lydenburg. The concentric pattern described above is well emphasised in many of the engravings, even though in quite a stylised manner. For example, Fig 3 clearly shows two engraved homesteads with roads leading to the central enclosures, the nesting rings and the houses, represented by dots, in the outer ring.

Most of the points I have mentioned are familiar to us from previous archaeological research on many Black farming communities that expanded into the grassland regions of the eastern half of South Africa during the last 500 years and adopted stone building. The concentric homesteads with a stock pen in the centre, the Sotho style pottery, other aspects of the material culture as well as the basic elements of the economy – cattle, small stock and typical African crops – all fit easily into our concept of the LIA. But when we take a closer look things are not quite so familiar.

Some exceptional and unexplained features

First let us have another look at the homestead layout. Fig 2 is a sketch plan of what is apparently a typical homestead from a settlement near Lydenburg. The first issue concerns the central enclosure, which, being roughly circular, is what I call a 'primary enclosure'. Note that this has *two* entrances, the road leading in from the top of the picture and, opposite it, another passage leading into the domestic area. But primary enclosures of the LIA normally have only *one* entrance. The second oddity concerns the ring of enclosures arranged around the centre like the petals of a flower. Note that these abut against the central enclosure and are therefore what I call 'secondary enclosures', i.e. they were built after the central primary. Note also that their entrances face *outwards*. I know of no other local Iron Age pattern like this. It is, for example, the reverse of the pattern typical of Sotho-Tswana settlements, where a ring of *primary* enclosures, each with a single entrance, open *inwards* into a central enclosure, which is *secondary*. We therefore have a pattern that at first looked familiar, but turns out to be the opposite of what we would expect from settlements associated with Sotho culture (remember the pottery is Moloko).

We do not yet know exactly what function this ring of secondary enclosures served, but they were probably associated with livestock. Yet their entrances face directly onto the domestic areas with their thatched houses, edible to live-

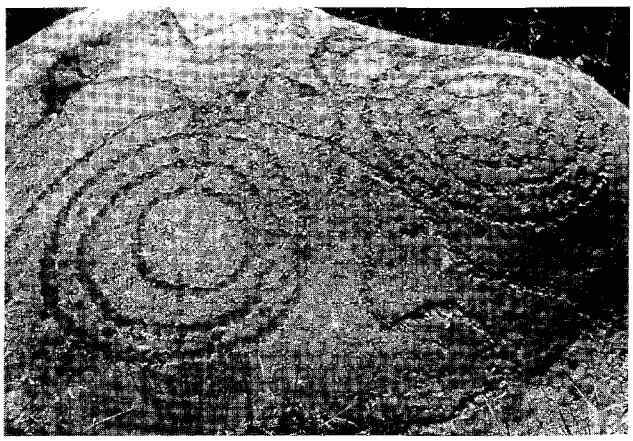

Fig 3: Rock engraving depicting a settlement plan. The concentric pattern is well emphasised, even though in quite a stylised manner.

stock. The second passage entrance to the central enclosure would allow stock to move from the centre via the inner edge of the domestic area into the secondary enclosures. But why go to all this trouble when the stock could simply be penned in the central enclosure?

There are several other questions for which we still have no answers. These include the issue of why the settlements cluster so tightly in the landscape between Ohrigstad and Carolina. And indeed, why were these people so wedded to the Escarpment environment, which was not generally favoured and, in fact, often avoided by LIA communities?

To begin to look for answers to some of these questions I have been influenced by examples from north of our borders. The most obvious comparison is with the terraced settlements of Nyanga in eastern Zimbabwe, so excellently researched by Roger Summers (1958) and recently by Robert Soper (2002) and his colleagues. Although the material culture is quite different, indicating no specific ethnic link with our area, we see a widespread development of labour-intensive agricultural practices, including terracing and mounding of earth beds for crops. Like our Mpumalanga settlements, Nyanga is also an extinct cultural phenomenon, which had a specific escarpment distribution and which flourished during the last few centuries before European colonialism penetrated into the interior of southern Africa.

Robert Soper's work at Nyanga was partly inspired by the work of John Sutton on evidence for intensive agriculture in parts of eastern Africa. Sutton and a variety of other researchers have

shown how a number of communities on volcanic highlands and along the Rift Valley developed much more intensive agriculture than neighbouring peoples. Each case has its own characteristics and each one seems to have developed more or less independently of the others. But they do have some shared features. For example, terracing and mounding or ridging of soil is quite common and some use furrow irrigation. In some cases livestock are penned and stall-fed, the manure being used on the fields.

I am currently trying to see if analogies from these eastern African situations can help us to understand some of the so far unexplained features of Mpumalanga. For example, could the ring of secondary enclosures around the central enclosure have been used for the stall-feeding of cattle? Could the manure have been used on the terraced fields? Could it be that maize, which was introduced into southern Africa roughly around this period, became a staple crop? If so, this would help explain why the community chose the relatively high-rainfall Escarpment country, which is more suited to maize than to the drought-resistant African grains. It would also help to explain how the area could sustain such a dense population, since maize under favourable conditions has a much higher yield per hectare than the African grains.

These questions are all very well, but what we now need is some really intensive archaeological research to test these and many other outstanding queries about these most interesting of South African ruins.

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RICHTERSVELD CULTURAL LANDSCAPE

For thousands of years the KhoeSan peoples of South Africa and Namibia maintained a pastoral way of life, tending their flocks of goats and sheep, gathering firewood and collecting wild honey. Following the discovery of diamonds at the mouth of the Orange River in the 1920s, however, prospectors began moving into the region, establishing the towns of Alexander Bay and Port Nolloth, a process that accelerated the alienation of traditional land that had begun early in the colonial period. Under apartheid, remaining pastoralists were encouraged to abandon their traditional lifestyle in favour of village life.

Today, the Richtersveld district of the Northern Cape is one of the few places where the people survive. Here, the Nama still move with the seasons and speak their ancient tongue, one of the vanishing KhoeSan, or 'click', group of languages. The traditional Nama dwelling – the *|haru oms,* or portable rush-mat-covered domed hut – is a reflection of a nomadic way of life, offering a cool haven against the blistering heat of the sun, yet easy to pack and move if grazing lands become scarce.

In 1991, a portion of Namaqualand, home of the Nama and other KhoeSan peoples, and one of the last true wildernesses of South Africa, became the Richtersveld National Park, famed for its extraordinary collection of succulents. In 2002, ancestral lands, including the park, were returned to community ownership and a year later the governments of South Africa, Namibia and Angola embarked on the development of a trans-frontier park along the west coast of southern Africa that is to absorb Richtersveld National Park. While much is being done to preserve the region's fragile ecosystem – and encourage eco-friendly tourism – little is being done to preserve its vanishing culture. Only through the adoption of a cultural heritage management strategy will traditional Nama ways survive in the coming decades.

From the 2003 World Monuments Fund's List of 100 Most Endangered Sites. The WMF works with local communities and partners to stem the loss of more than 500 irreplaceable archaeological and cultural sites around the world (www.wmf.org).

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Payments should be made through the Cape Town head office. See panel on page 20.

FURTHER REPORTS OF TERMITES AND FORMLINGS IN THE ROCK ART OF THE MATOPOS, SOUTH-WESTERN ZIMBABWE

Paul Hubbard and Siyakha Mguni

Formlings are a striking feature of rock art in Zimbabwe, especially in the Matopo Hills, south-western Zimbabwe. They have been convincingly interpreted as depictions of termite nests (Mguni 2002, 2004, 2006), but sites with both formlings and clear depictions of termites have hitherto been largely unreported. This article draws attention to a few of several examples in the Matopos that have recently been discovered or revisited during an archaeological survey by one of the authors (Hubbard 2005). These sites present depictions of formlings and termites in close association, and provide further support for earlier research on the subject of formlings in the Matopos and their key symbolic meanings.

The Matopo Hills are located 30 km south of Bulawayo (Fig 1) and extend for 100 km from the Mangwe Pass in the west to Mbalabala in the east. The Matopos are around 30 km at their widest point. Archaeologically, the area, especially the National Park, is one of the most extensively researched areas in Zimbabwe, contributing over 3 000 archaeological sites to a national database of about 14 000. The Late Stone Age in Zimbabwe, notably rock art studies, has only really been studied in any great depth in the light of modern ideas in the Matopos, especially with the work done by Walker (1995). It is a living cultural landscape and still holds meaning and significance for many people living in the area and beyond. The importance and significance of the area was recognised in 2003 when the Park and surrounding area were inscribed onto the UNESCO World Heritage List.

A selection of sites depicting formlings

Four sites with clear depictions of termites and possible formlings were recently discovered or revisited. The first site has unfortunately been exposed to extensive exfoliation that has destroyed or obscured many of the paintings. The relevant painting is located on the underside of the boulder and is thankfully in an excellent state of preservation (Fig 2). The painting depicts over 40 images of what appear to be flying termites leaving their nest. A crispate form a few millimetres below the painting is reminiscent of typical formling tops. The lower portions of this bichrome form are faded, but it may have been a formling.

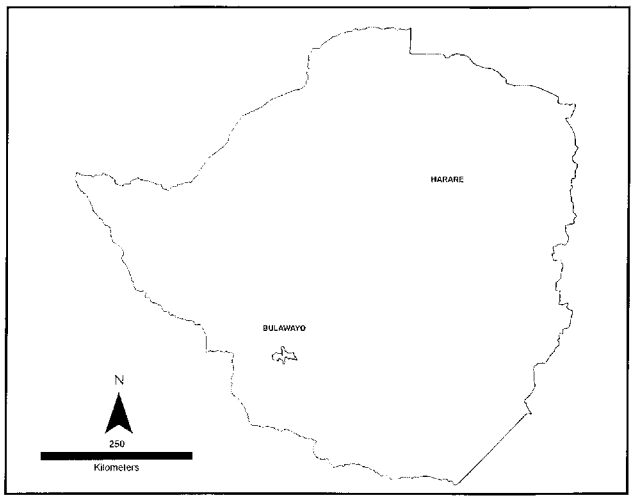

Fig 1: The Matopos in south-western Zimbabwe

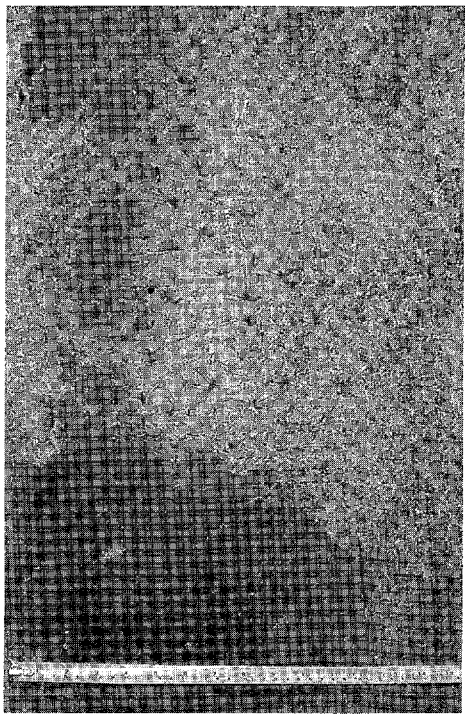

Fig 2: Nhongwe 8: Over 40 termites seemingly erupt from a bichrome formling-like figure

At the second site several kilometres away, a large boulder rests on a couple of smaller ones. The side of the large boulder has been exten-

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sively painted. These paintings include large and small human figures in both red and yellow paint, and a variety of animals. There are several other painted shelters nearby. The relevant image consists of a group of at least 17 figures that appear to be flying termites moving towards a monochrome bag-shaped formling (Fig 3).

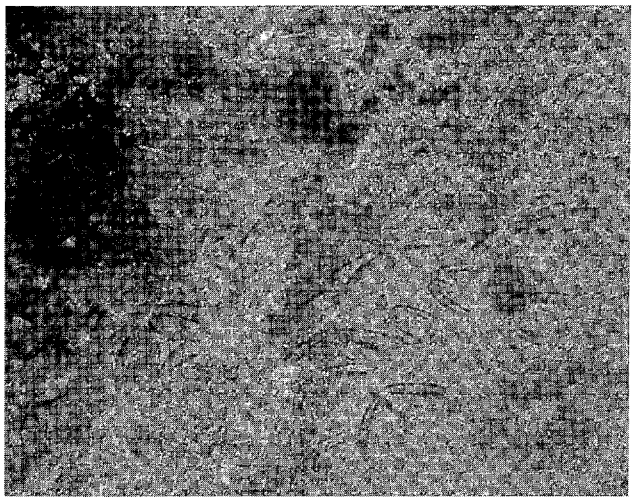

Fig 3: World's View Shelter 1: At least 17 termites are flying towards a bag-shaped formling

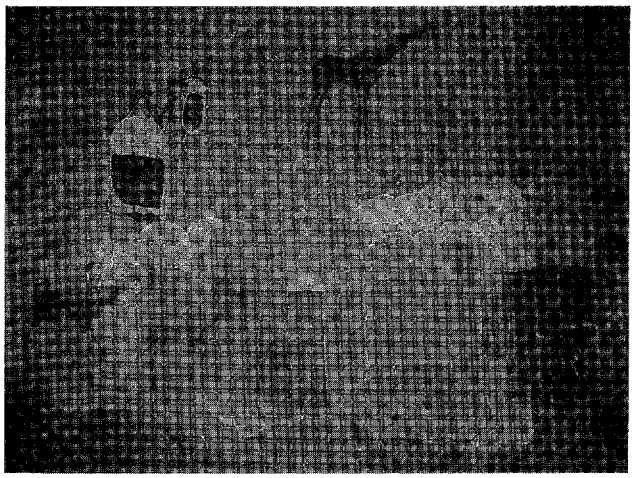

Fig 4: Nanke Cave: One of the largest and most beautiful formlings known in the Matopos

The third site is Nanke Cave, which has been studied extensively since it has some of the most beautiful and well-preserved cave paintings in the Matopos. A variety of animals, people and indeterminate figures are depicted. The main panel is dominated by a large and intricate 'formling', somewhat unusually painted in a variety of colours (Fig 4). Below this image and slightly to the right is a cluster of no less than 25 images of flying termites that are delicately painted with red bodies and white wings, edged in red pigment (Fig 5).

The fourth site is Silozwane Cave, one of the most densely painted sites in the Matopos. Animals, fish, lizards, snakes and a veritable panoply of human figures greet the eye when one enters the cave. Amid the paintings is an exquisite flying termite (Fig 6) that is similar to the Nanke images, but much clearer. This termite is defined with head, abdomen complete with a pair of veined white wings and red spines.

Correspondence between termites and the forms depicted in the art

Examination of the paired wings on each side of the body in images shown in Figs 2, 5 and 6 confirms these painted forms as a group of termites. This paired feature of the wings is what gives the order of these insects the name *Isoptera*. The slight upward curvature of the abdomen during flight depicted in Figs 4 and 5 is also diagnostic of flying termites. In several cases and in some of the illustrations shown here, flying termites are clearly associated with a formling of one type or another as flying outwards and/or towards these forms. The flecks visible in many formling images are distinctive for this subject and they may depict wingless termites (sterile forms) or even nymphs or eggs. In one panel the oval flecks have been argued to be termites (Mguni 2006). Another termite cluster in the Matopos shows their elongate wings, clearly split and curving upwards as they do naturally during flight (see reproduction in Parry 2000: 39). These paintings are generally found in areas where a myriad of termite species and their distinctive mounds occur in abundance.

Of the 281 genera of termites known around the world, 54 occur in southern Africa, with no less than 1 000 known species. Most species build 'separate nests', both subterranean and epigeal types, and these are a typical landscape feature of savannahs. They also nest in rock shelters. While there is wide variability in nest forms, some species of *Apicotermes*, a widespread genus in Africa, are of especial interest because of their architecturally refined and delicate nests. Their nests are often ovoid, with well-defined internal galleries, which are sometimes structurally regular and symmetrical. Other species in the *Hodotermes* genera (harvester termites) and *Amitermes* construct compact and invariably spherical subterranean nests. These nests are divided into numerous chambers by horizontal and vertical partitions. Although nests vary considerably, even within the same species, their

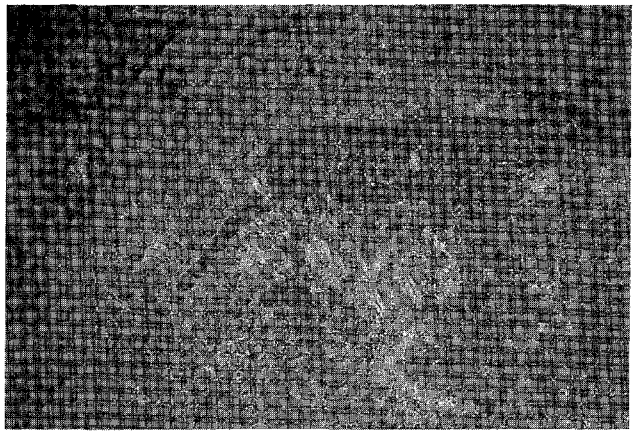

Fig 5: Nanke Cave: A dense cluster of termites, painted to the lower left of the formling

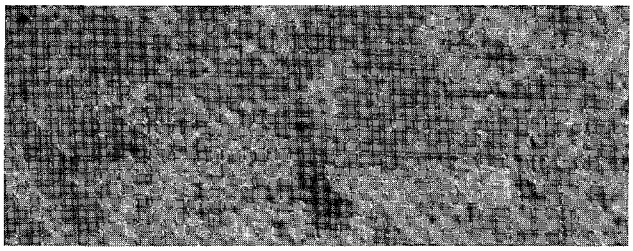

Fig 6: Silozwane Cave: The only termite painted in the cave

basic elements remain constant. The architecture of termites' nests closely resembles the morphology of formlings. This observation now seems hardly surprising given that flying termites and the earthen edifices they build attracted the attention of San artists, who painted them in great profusion in southern African rock art.

The increasing observations of termite imagery and that of associated formlings at several sites in the Matopos and other parts of Zimbabwe indicate that this invertebrate subject matter might have been more significant to the artists' culture than has previously been realised. But exactly how this subject would have been important in prehistory cannot be asserted on the basis of the painted record alone. Ethno-historical and ethnographic records of the recent past are however providing very useful pointers to the role played by these insects in the cultural economy of San hunter-gatherers.

Economic importance of termites to the San

Based on analogy with extant San, it can be argued that past hunter-gatherers would have had a deep and accurate knowledge of the faunal and floral species they interacted with. They would have closely observed their cyclical behaviour and activity. Since termites constitute a delicacy and a valuable source of fat and protein for most San, the know-how to exploit these insects at different seasons would have been well developed. Flying termites are plentiful during the early summer in the Matopos (Walker 1995: 42-3). It is estimated that between 7,4 and 25,2 per cent of crude protein is obtainable from 0,7 grams of termites (Walker 1995: 43), which could be exploited from termites' nests in organised harvesting strategies. Unfortunately, evidence for such activities is unlikely to have been preserved in the archaeological record, although bone implements have been identified in South Africa that are argued to have been used by early hominids to dig and break up termites' nests (Backwell 2004).

The symbolic importance of termites

As with the bulk of San art, the choice of this subject matter needs to be explained in terms beyond just its economic value to the hunter-gatherers. The graphic focus of what was depicted partly suggests the kind of importance that was associated with this viewpoint. In general, it has to be pointed out that San images were conditioned less by the desire to produce facsimile copies of subjects than by the wish to capture those often hidden but significant subject elements (Mguni 2006: 596). Consistent with most chosen subjects in San rock art, formlings are depicted in side-view. While this does not solve the difficulty of recognising them, it provides a starting point in perceiving their 'correct' orientation. Some features of formlings were omitted while some were included and, because of this, highlighted. The artists chose an aspect of nests that is not usually visible in ordinary circumstances – the interior view shown in cross-section. Yet this subject focus does not signal itself immediately to uninformed viewers.

To informed viewers, it seems that the artists' interest in emphasising the interior of these nests achieved the purpose of communicating some symbolism. This symbolic purpose influenced the choice of which viewing angles and details of significant subject features were to be depicted.

It is important to note in this regard that termites' nests contain things that are full of fat – termites, nymphs, eggs and, crucially, the distended queens, which were considered to be powerful incubators of potency. The conceptual union between termites and potency is further ampli-

fied in folklore traditions about the super-heroine of the Kalahari San. The fat, a significant substance that features in fundamental San rituals and rites of passage, is crucial to understanding formling symbolism. Part of the significance of this substance lies in the fact that it is an anomalous food, transcending the eating and drinking opposition found in all other hunted and gathered foods. It combines wet and dry, hot and cold, and thus mediates diverse categories as an embodiment of potency. And it seems appropriate that the incubators of this 'embodiment of potency' – the termites themselves and the nests they build for their own protection – achieve symbolic edification in the rock art. In the broader scheme of this symbolic focus these nests, while being potent mediators of the San cosmos, were also symbolic avatars of a spirit world entity such as God's house, which the San believed to have unparalleled transformative and generative powers. It is in itself the incubator of potency par excellence.

Conclusion

This report of a clear association between termites and formlings helps to unlock the symbolic meaning of formlings and their associations, a subject that has previously been enigmatic and problematic. Formlings were penetrating symbols embedded at the core of a multi-layered matrix of San religious ideology and cosmology (Mguni 2006). At one level of metaphoric mediation in San supernaturalism these forms evoked and depicted how artists translated and articulated connections between the physical and the spirit worlds.

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TSODILO: SOME IDEAS ON AUTHORSHIP

Edward Eastwood and Dawn Green

'The Precipitous Rocks', 'Bracelet of the Sunset', 'Slippery Hills', 'Sorila' – the many names given to the Tsodilo Hills of Ngamiland Province, Botswana, reflect the fascination that these hills have had for so many people. This may be due to the fact that they are the only hills within hundreds of kilometres of what appears to be an extremely flat landscape. On a recent expedition to this well-wooded part of the Kalahari we were struck by the appearance of certain paintings found in Tsodilo's overhangs and shelters. This led us to question the authorship of these paintings, especially those that have been ascribed to San hunter-gatherers.

We believe that the three broadly defined rock art traditions – hunter-gatherer, herder and farmer – identified in our research areas and others, should in theory be able to explain aspects of the art in other regions for which there are affinities. While we saw a small proportion of the many hundreds of sites at Tsodilo, further insights into the authorship of some of the paintings can be suggested. These are based on a comparison of data from rock art sites of the Central Limpopo Basin (CLB), the southern Drakensberg and elsewhere in southern Africa.

The paintings

Alec Campbell and his colleagues (Campbell & Robbins nd; Campbell, Denbow & Wilmsen 1994; Walker 1998) identify two broad categories of paintings at Tsodilo, namely red and white. We briefly discuss each category and other researchers' ideas on authorship and then introduce our own based on comparisons with similar paintings in the CLB, engravings from South Africa's central interior, and the San art of the CLB, Drakensberg and the Matopos.

The red paintings

These are grouped into two macro-categories (Campbell & Robbins nd: 10):

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Dawn Green, an archaeology student and research associate at the University of South Africa (Unisa), Pretoria, conducts surveys and records rock paintings in the Eastern Cape Drakensberg.

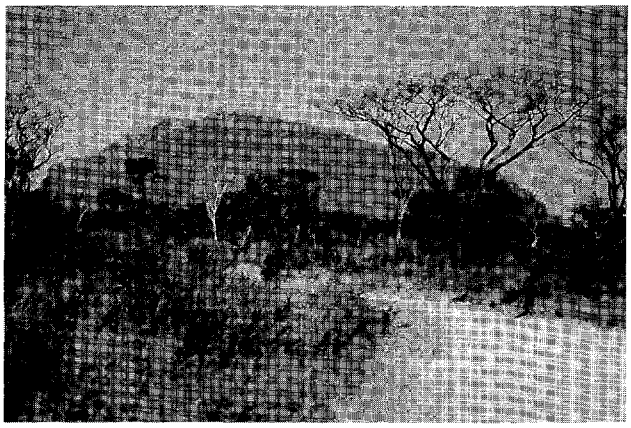


Fig 1: Male Hill, Tsodilo

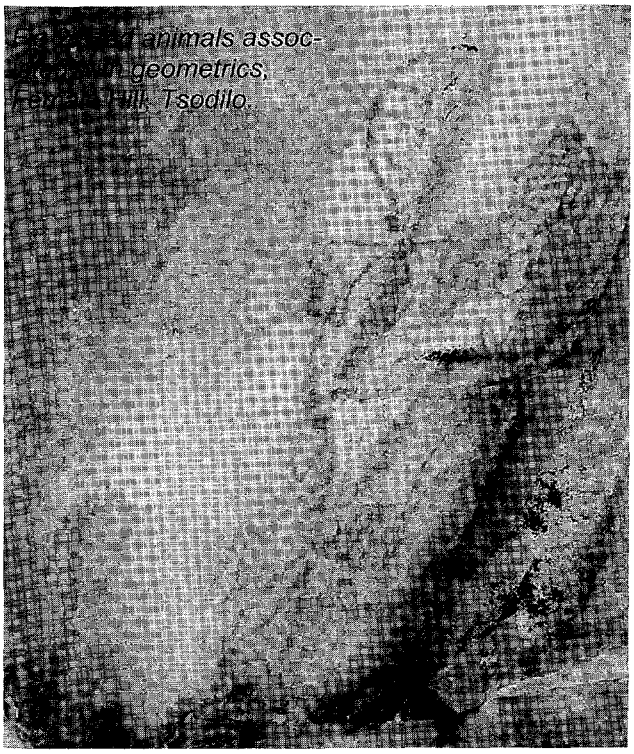
- *Animals.* These images are subdivided into outlines, filled outlines and outlines with geometric in-fills that predominantly represent cattle, eland and zebra, and silhouettes (blocked images) where rhinoceros, giraffe, gemsbok and elephant are painted the most.
- *Geometrics.* This category includes schematic human forms, circular motifs, animal skins, ladders, shields, squares, herringbones, finger marks and handprints.

All the red images appear to be finger-painted. Significantly, some animal images are frequently associated with geometric motifs, specifically circle-and-grid and animal-skin shapes (Campbell & Robbins nd: 10).

The white paintings

These are grouped into five categories (Campbell & Robbins nd: 12):

- *Animals.* These include antelope, horses, snakes, cattle, giraffe, elephants, rhinoceros and zebra.
- *Geometrics.* Largely variations of the circle motif: Circles, concentric circles, rayed circles, circle-and-cross, circle-and-dots, circle-and-grid, crosses, T and M shapes, and 'complex' geometrics.
- *Handprints.*
- *Humans.* These include figures with hands on hips and horsemen.
- *Objects.* These include a wagon and a wagon wheel.



...animals assoc-
...geometrics,
...with Tsodilo.

Previous ideas about authorship

Campbell, the foremost authority on the Tsodilo rock paintings, has meticulously recorded over 3 000 images at some 350 sites. From his research, the white paintings are generally believed to be the work of Bantu-speaking farmers, people who lived at Tsodilo before the present-day Hambukushu, who are neighbours to the Ju/'hoan San community. The red paintings are believed by the Ju/'hoansi to have been the work of N/haekhoe hunter-gatherers who lived at Tsodilo prior to the arrival of the Ju/'hoansi in the mid 19th century (Xonta Xao personal communication; Campbell & Robbins nd: 8-9).

In a study that included mention of the Tsodilo and CLB paintings by Edward Eastwood (2003), geometric finger paintings were ascribed to the Khoekhoen, while the blocked, solid or in-fill red paintings were ascribed to hunter-gatherers, probably N/haekhoe or related groups such as the Bugakhoe (Kxoe; see also Eastwood et al, in press). Indeed, the Bugakhoe of the Okavango panhandle area claim that their ancestors painted at Tsodilo (Chumbo & Mmaba 2002: 8). When the geologist and explorer, Siegfried Passarge, travelled to the hills in the late 19th century, however, he found 'Gokwe' hunter-gatherers living there who emphatically denied that they had made any of the paintings (Wilmsen 1997: 186; the Gokhoe are also a sub-group of the Bugakhoe; Kotsi Mmaba, Willemien le Roux pers comm). Who, then, painted at Tsodilo?

Of the white and red paintings together, Alec Campbell, James Denbow and Edwin Wilmsen (1994: 156) have this to say:

'... it would appear that some of the Tsodilo paintings may result from the combined values and beliefs of Khoisan and Bantu-speaking peoples and that the paintings were not made by foraging peoples in isolation from their pastoral neighbours. In other words, the "use" of the paintings was almost certainly shared by both peoples.'

Campbell and his colleagues astutely remarked that the paintings were very similar to the engravings found in the central interior of South Africa (Campbell & Robbins nd; Campbell et al 1994; see also Rudner 1965: 60), an important observation that has enabled us to come to a firmer conclusion on specific authorship of the Tsodilo paintings.

Although Benjamin Smith and Sven Ouzman (2004) identify the Tsodilo geometrics as the work of Khoekhoe herders whose art originated in south-central Africa and then spread down into South Africa, they provide no detailed data on which specific categories of Tsodilo motifs were made by herders, other than the apparently geometric forms.

In this preliminary study, we tentatively question some of the assumptions made previously by Eastwood (2003; Eastwood et al, in press), as well as the ascription of a broad Khoisan-Bantu authorship, which we believe can be clarified.

Some new observations on authorship

By comparing the rock paintings of Tsodilo with those of the CLB and other areas, we have come to the following conclusions on authorship based on studies by Smith and Johan van Schalkwyk (2002), van Schalkwyk and Smith (2004), Eastwood (2003), Eastwood and Smith (2005) and Catherine Namono (2004).

First, the images that Campbell and his colleagues categorise as animal skins we identify as women's back aprons and ladders, double ladders, shields and squares as depictions of women's front aprons. We believe the Khoekhoen made these paintings based on

their formal congruence with CLB herder apron motifs.

Second, we propose that Khoekhoe herders made all the red paintings, including geometric, human and animal images. Although the South African corpus of Khoekhoe paintings that is known has only a small proportion of human and animal imagery, the engravings of the central interior have a much larger percentage of such images, thus placing the Tsodilo paintings closer to the engravings. Our colleagues, Jeremy Hollmann and Sven Ouzman (personal communication), conducting studies on the engravings of North West and Free State Provinces, consider most rough-pecked engravings to have been the work of Khoekhoe herders. These engravings also include images of women's aprons, some of which correspond to the animal skin and ladder motifs at Tsodilo.

Besides this congruency with the engravings, there are other correspondences between the Khoekhoe paintings of the CLB and the Tsodilo red paintings. For example, there are numerous paintings of women's back and front aprons in the CLB where animal skins, shields and rectangles correspond formally with the Tsodilo images of aprons. Eastwood and Smith (2005) also argue that handprints are Khoekhoe marks, rather than being of San origin, because of their strong association with Khoekhoe geometrics, a piece of evidence that suggests herder authorship. Significantly, although human and animal imagery is comparatively rare in the CLB repertoire of Khoekhoe motifs, there are nonetheless correspondences with the Tsodilo animal paintings. For example, in the CLB there are 'crude' representations of men and women that are similar to some of the human figures at Tsodilo, and a finger-painted in-fill rhinoceros from the CLB is almost identical to the famous Tsodilo rhinoceros paintings (Fig 3), including the fact that both are associated with circular motifs.

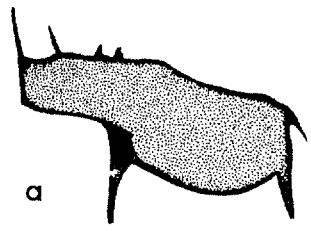


Fig 3(a): Rhinoceros from Female Hill, Tsodilo (after Campbell et al 1994: Fig 15)

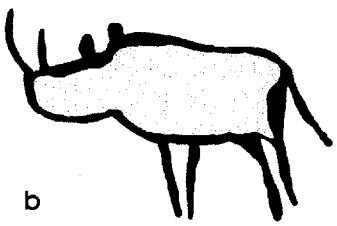


Fig 3(b): Rhinoceros from Northern Venda, Central Limpopo Basin

Fig 4: Bantu language-speakers' paintings, Tsodilo (after Campbell & Robbins nd: Fig 5).

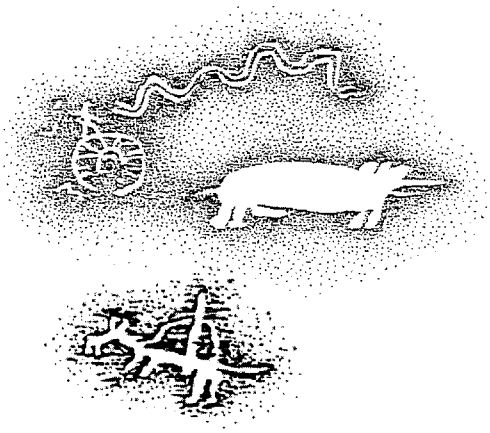


Fig 5(a): White 'complex geometrics' from Upper Cavern, Male Hill, Tsodilo (after Campbell & Robbins nd: Fig 6)

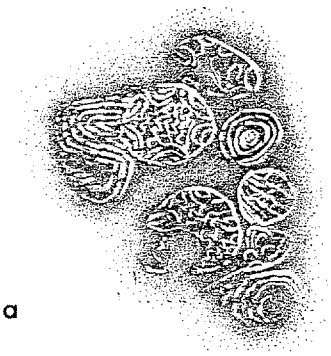
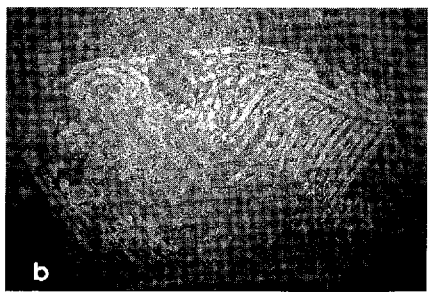


Fig 5(b): 'Complex geometric' Khoekhoe paintings, Makgabeng Plateau, Central Limpopo Basin



Third, a proportion of the Tsodilo white paintings that Campbell and Robbins describe as being made with 'powdery and sometimes slightly oily pigment' and depicting humans with hands on hips, wagons, horsemen and animals such as elephant and giraffe correspond to the daubed white Bantu-speakers' art of the CLB.

Fourth, the category of white paintings that are described by Campbell and Robbins as being 'carefully executed' and consist of circular motifs and complex motifs (Fig 5) are most certainly Khoekhoen judging by the painting technique and subject matter. Circular and 'complex' motifs at Upper Cavern on Male Hill, for example, are very similar to some white Khoekhoe paintings in the CLB. Importantly, in the CLB there are two

distinct phases of Khoekhoe paintings – an earlier red phase and a later, predominantly white, phase (Eastwood & Smith 2005: 71) – a scenario that is echoed at Tsodilo where red motifs may underlie similar white motifs.

Fifth, we are doubtful that any of the paintings, including the 'finer' bi-chrome paintings of animals, were the work of hunter-gatherers. Comparing the Tsodilo paintings to the fine-line brush-painted imagery of the Drakensberg, the Matopos and the CLB, we could find no plausible correspondences. For example, all the Tsodilo animal motifs seem to be finger-painted (bar a few details, like the horns of cattle); their large size gives one the mistaken impression that they appear to be fine-line. Not only in technique, but also in subject matter the Tsodilo art is different to the San art of other areas. Importantly, despite some authors' descriptions of mythological figures, rainmaking scenes, rain-animals, or entoptic imagery (Campbell & Robbins nd; Campbell et al 1994; Walker 1998), we could find no evidence of this. Indeed, there seems to be no evidence at all to suggest that the paintings were shamanistic in conception. We therefore disagree with previous conclusions that suggest that a proportion of the Tsodilo art is the work of San hunter-gatherer artists.

Other than the technique of applying paint, pigment consistency and subject matter there are further lines of evidence that favour the ascription of a Khoekhoe authorship to the bulk of Tsodilo paintings. We noted that in sites where paintings were made on rock faces, high up on rock ledges, under boulders or in small shelters there were no LSA lithics or pot sherds, these being found in larger shelters that were evidently used as habitation sites by LSA hunter-gatherers. Unless the artefacts have been removed from these sites, there seems to be a similar pattern in the CLB, where no surface artefacts occur in sites exclusively painted by Khoekhoe artists.

Site preference may provide another clue: In the CLB there is a noticeable preference by Khoekhoen for sites that occur high up on cliff faces, under boulders at the summits of hills or on open, unsheltered rock faces. This pattern is also clearly evident at Tsodilo. Additionally, there is no evidence in the literature to suggest that any Kalahari hunter-gatherers were ever rock painters, which could mean that the Tsodilo paintings were exclusively made by herders and farmers.

The formal similarities between the Tsodilo Khoekhoe art and the engravings of the central interior and the paintings of the CLB are also evident in the Central African rock art of hunter-gatherers ancestral to the Pygmies, where geometrics and animals form discrete categories. This may indicate that the origins of the Tsodilo Khoekhoe art lie in Central Africa and was brought, along with pottery and sheep, into southern Africa via the migration of herders (Smith & Ouzman 2004; Eastwood & Smith 2005).

As elsewhere in southern Africa, dating rock art is elusive, but much of the Tsodilo art might have been made at the beginning of the first millennium AD or even earlier, thus suggesting that the art was made by 'proto-Khoekhoen', a proposal offered by Edwin Wilmsen (Smith & Ouzman 2004: 520).

Conclusion

Our brief study of Tsodilo art based on a comparison with the rock arts of the Drakensberg, Matopos and CLB has convinced us that it is unlikely that any paintings were made by hunter-gatherers. Rather, that the authors were proto-Khoekhoen, with a small proportion of Bantu language-speakers' art. Furthermore, we identify a proportion of the white paintings as the work of Khoekhoen based on our knowledge of the earlier and later phases of Khoekhoe paintings in the CLB, which has the most abundant body of herder art in southern Africa and for which a detailed typology has been compiled.

Campbell, Denbow and Wilmsen (1994: 158) state that the isolated and hitherto enigmatic art of Tsodilo 'stands like a stepping stone between the geometric art of Central Africa and the younger engravings of the northern Cape', a notion we agree with but to which we would add the 'geometric tradition' paintings of the CLB and other areas in southern Africa.

Our combined knowledge of the rock arts of other regions in southern Africa and, in particular, the replicability of the typological model set out for the Khoekhoe images in the CLB have enabled us to extend these ideas to the Tsodilo Hills. This preliminary investigation remains tentative, but we hope that these ideas will contribute towards more in-depth studies on the authorship of the Tsodilo paintings and towards understanding the diversity and complexity of this rock art.

[References appear on page 14]

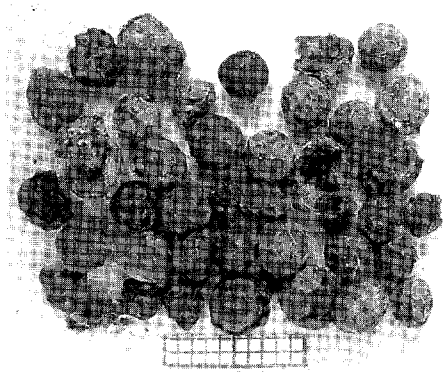
SIXTEENTH CENTURY PEPPERCORNS

Christine Sievers

A recent report by Liz van Tonder (*The Digging Stick* 2006) on the wreck of the São João (1552) records 'the recovery of a large cache of peppercorns of foreign origin' and states that 'the peppercorns are the first cultural remains found that may be linked to a survivor camp'. The accompanying picture of peppercorns piqued the perceptive powers of Val Ward, who is familiar with peppercorns and other remains recovered from the wreck of the São Bento. This ship foundered two years after the São João approximately 70 km further south, at Msikaba River mouth in Transkei (Auret & Maggs 1982). Val questioned the veracity of the São João peppercorn identification and approached me for my opinion.

The peppercorns from the São Bento wreck are of the species *Piper nigrum*, the table condiment we use and call 'pepper'. Pepper belongs to the *Piperaceae* family and originated in the Western Ghats of Kerala State, south-western India, where it still occurs wild in the mountains (Kew 2007). The *Piper nigrum* fruits produce peppercorns that are black, white or green depending on the time of harvest and the method of processing. 'Black pepper is unripe peppercorns dried in the sun – the green skin becomes black and shrivelled. White pepper is made by removing the red skins from ripe peppercorns, after which they are bleached and dried in the sun. Green pepper is made by pickling or freeze drying the fresh green fruits.' (Van Wyk 2005: 298).

The peppercorns and various other organic remains from the São Bento were found in the barrel of a large muzzle loader salvaged from the seabed just off the island at the mouth of the Msikaba River. About 50 g of peppercorns were recovered. The presence of the peppercorns and other evidence indicates that it is likely that the cannon was being used for storage in the hold of the vessel. The preservation of the organic remains is attributed to the protection offered by the barrel and perhaps the preservative chemical action of the bronze (Auret & Maggs 1982: 11). Preservation because of the chemical effects of metals has been documented elsewhere. Miksicek (1987: 218) reports on flax fibres preserved by the leaching of copper salts from a bronze object and wooden baskets and tools from the Roman period being preserved in ancient copper mines in Cyprus. In the United States, preservation of pollen enhanced by its proximity to copper artefacts and wood fragments preserved by corrosion products from iron nails have also been reported (*ibid.*).



Peppercorns, Piper nigrum, *from the São Bento wreck (1954)*

Significantly, many of the São Bento peppercorns have traces of verdigris on them. Some peppercorns are even still embedded in verdigris. Verdigris is the common name for the patina or green crystallised substance that is formed when copper, bronze or brass is weathered and exposed to air or seawater for a long period. It can act as a fungicide, thereby preventing the action of decomposers and promoting the preservation of organic material. Combined with the physical protection afforded by the cannon, verdigris preserved the precious peppercorns that were being transported back to Portugal on that fateful journey in 1554. Interestingly, the positions of the peppercorns in the verdigris and the remnants of a stalk and possibly a leaf indicate that the fruits (peppercorns) were stored as they had been collected, on the fruiting spike. The pepper plant is a woody vine that needs support and the pendulous flowering spikes may each produce 50 to 60 fruits (Kew 2007). The variation in the size (approximately 3 mm to 5 mm) of the fruits from the São Bento may be because some fruits were not yet fully mature when the spikes were harvested.

Pepper-like condiments are also produced by plants other than *Piper nigrum* and 'pink pepper'

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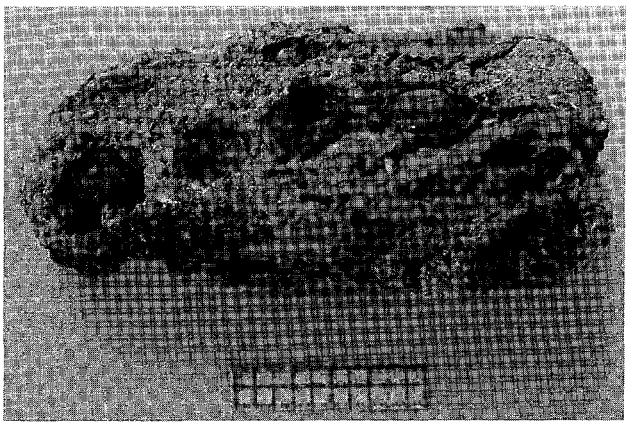

Peppercorns from the São Bento wreck encrusted in verdigris

comes from the pink pepper or peppercorn tree, *Schinus molle*, which belongs to the *Anacardiaceae* (mango) family. It is indigenous to the Andes of Peru (Henderson 2001). The fresh fruits of another *Schinus* species, *S. terebinthifolius*, the Brazilian pepper-tree, also have a pleasant taste, mildly peppery and sweetish. *Schinus* trees have been extensively planted in South Africa as ornamentals and for shade, and have become declared weeds and invaders. *S. molle* can withstand drought and frost and has a widespread distribution across the central parts of the country. *S. terebinthifolius* is restricted to the KZN coast and is a serious invader (*ibid.*). Today it is rampant in the Port Edward area where the survivors of the wreck of the São João are likely to have set up camp 455 years ago.

The peppercorns from the suggested camp site are from the genus *Schinus* (Liz van Tonder pers. comm.) and because that genus is South American in origin, the statement 'peppercorns of foreign origin' is correct. But it is highly unlikely that a Portuguese vessel that left India in February 1552 (Auret & Maggs 1982) would be carrying fruits from a plant indigenous to South America. The excavated fruits are most probably modern contaminants from the species *Schinus terebinthifolius*. The common name, peppercorn tree, which was part of the original identification, was the source of confusion. The ubiquity of shared common names is not restricted to pepper plants and the use of common names can be a problem for interpretations of plant remains generally. Sadly, thus, the presence of 'peppercorns' does not provide cultural evidence of a possible location of the São João survivors' camp site.

Acknowledgements

I thank Val Ward for suggesting I verify the identification of the São João peppercorns, for useful discussions and for help with editing. I thank Marlize Lombard and Linda Ireland of the Natal Museum for access to the São Bento peppercorns and the small lump of verdigris (accession number 82/4). I thank Liz van Tonder for access to details of the identification of the fruits from a possible site of the São João survivors' camp by Dr Hugh Glen, who was then with the National Botanical Institute in Pretoria.

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Ancient tracks in a mountain range

Wright, J & Mazel, A. 2007. *Tracks in a mountain range: Exploring the history of the uKhahlamba-Drakensberg.* Johannesburg: Wits University Press. Soft cover,155 pages, 6 maps, 98 photos and diagrams. Price R190 from the Trans-Vaal Branch: www.archaeology.org.za.

Many books have been written about the Drakensberg, covering topics such as its formation, scenic beauty, mountaineering, rock art and history, but most of these have been from a colonist's perspective. This book is different in that its authors have focused on aspects of heritage that have not been addressed heretofore. The uKhahlamba-Drakensberg Park was declared a World Heritage Site on the basis of its scenic beauty, its high degree of biodiversity and the exceptional cultural value of its San rock art heritage. But what heritage is being recognised? Whose heritage is it? How has this heritage come to be made? By collating unwritten and written stories, archaeological research and documentary evidence, the authors highlight the histories of the indigenous San hunter-gatherers and black farmers, as well as of the European colonisers.

Both John Wright and Aron Mazel are well qualified to address the archaeology, history and heritage of the Drakensberg. John Wright grew up in the foothills of the mountains. A lecturer in the History Department of the University of Natal/University of KwaZulu-Natal since 1971, he became a Senior Research Associate in History in 2006. Aron Mazel studied archaeology at the University of Cape Town and since 1979 has undertaken extensive archaeological research into the hunter-gatherer history of the Thukela basin and the rock art of the Drakensberg. He now teaches at the International Centre for Cultural and Heritage Studies, Newcastle University, UK.

Archaeologists started taking an interest in the Drakensberg hunter-gatherers only after they had disappeared. Knowledge of the history of the hunter-gatherers and early black farmers derives largely from excavations at five rock shelters since 1970. Chapter 2, 'The excavated past', contains many interesting facts, finds, dates and tables as a result of the excavation of these and other shelters and adds to our knowledge of the heritage San and early black farmers who left no written records.

The Drakensberg contains the richest concentration of rock paintings anywhere in the world and in chapter 3 the authors give us a fascinating insight into the recording and interpretation of this valuable art. It is amply illustrated with photographs and drawings of and tables about the San paintings (Mazel recorded 19 000 paintings throughout the Drakensberg).

There is a detailed section on early black chiefdoms, how new kingdoms were formed, turbulence and battles, the impact of colonial occupation in the 1840s and the last years of San autonomy during which the San and Black communities often raided and traded together in Nomansland. The coming of the British colonists and the Boers is well described, as is the disruption caused by the subsequent colonial governments on the indigenous peoples. The forced removals to create black homelands are also covered. The authors also look at the influence of tourism, conservation and the implementation of wilderness areas, making the point that although this heritage is meant for all, only those who are better off can afford it.

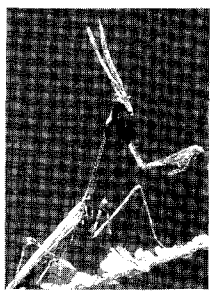
Tracks in a Mountain Range is attractively laid out and well illustrated. But it also has boxed text inserts that I personally find disruptive. However, the boxed text and photograph of the hunting kit found in Eland Cave in 1929 is remarkably poignant. I found the use of relative dating instead of archaeological dating somewhat cumbersome. The authors did not aim to write a definitive history, but tried 'to open up ways of looking at the region's past which go beyond the mainly 'colonial' views which have predominated in the literature up to the present.' They have successfully achieved this objective. Having read this book, a visit to the Drakensberg will never be the same again.

Jo Earle

LETTER TO THE EDITOR

Sir: Enclosed find a photo [below right] of a mantis in Underberg taken last summer. Paging through Pat Vinnicombe's *People of the Eland*, I came across two illustrations [see one below left] from Site F1, Good Hope Shelter on pages 121 and 221 containing many dancing figures with what I used to think were 'feathered' headdresses. Bearing in mind how the Bushmen considered the mantis, I am now having second thoughts. They look more like 'mantis dances' now. Perhaps you may care to publish these photos to invite comment.

Bill Small, Retired Chief Forester, Drakensberg, Underberg



ARCHAEOLOGY IN BRIEF

Chinese writing '8 000 years old'. Chinese archaeologists studying ancient rock carvings say they have evidence that modern Chinese script is thousands of years older than previously thought. Researchers identified more than 2 000 pictorial symbols dating back 8 000 years on cliff faces in the north-west of the country. They say many of these symbols bear a strong resemblance to later forms of ancient Chinese characters. The Damaidi carvings, first discovered in the 1980s, cover 15 km^2 and feature more than 8 000 individual figures, including the sun, moon, stars, gods and scenes of hunting or grazing. 'We have found some symbols shaped like both pictures and characters,' said Li Xiangshi of the North University of Nationalities in Ningxia Hui. Until the discovery, the earliest characters included 4 500-year-old pottery inscriptions from Henan province.

Xinhua/BBC News, May 2007

Climate change key factor at Angkor. New monsoon patterns, brought about by climate change, were a key factor in the abandonment of Cambodia's ancient city of Angkor, according to University of Sydney archaeologists. The centuries-old city, home to more than 700 000 people and capital of the Khmer empire from about 900 AD, was mysteriously abandoned about 500 years ago. It has long been believed the Khmers deserted the city after a Thai army ransacked it, but archaeologists working the site say a water crisis was the real reason it was left to crumble. 'It now appears the city was abandoned during the transition from the medieval warm period to the little ice age,' Prof. Roland Fletcher said. Blockages found in two large structures that controlled the water system in central Angkor suggested the water management network had begun to break down late in the city's history. *The Age, 14 March 2007*

First Pompeii uncovered. The origins of the famed Pompeii, buried by Vesuvius in 79 AD, have emerged from years of excavations. The first Pompeii was not built by the Romans or even by the Greeks who preceded them, but by an ancient people called the Samnites, Pompeii Heritage Superintendent Piero Guzzo said. Wielding photos of inscriptions, votive offerings and even entire buildings, Guzzo said: 'For the first time we have come to understand how Pompeii was born and not just how it died. The most exciting discoveries were the frescoed buildings with precious mosaics, still perfectly intact, dating back to the Samnite foundation of the city in the 3rd century BC.' The fresco in the so-called House of the Centaur is one of the oldest found in the whole of Italy. 'The true Pompeii is not the Roman one that was. Its golden age was in the 2nd century BC, as shown by these buildings.' *ANSA, 1 February 2007*

Ancient Thracian brain surgeries. Bulgarian archaeologists have discovered an ancient Thracian man's skull that has undergone cranial surgery. The trepanation was done for medical reasons and it is the first one believed to be from Thracian times. The find is dated to 2500 to 1800 BC. Thracians were numerous tribes that developed from a mixture of invading Indo-European and indigenous peoples in the Balkans over the centuries, starting from the Early Bronze Age. *Lifestyle, 3 October 2006*

New glacier theory on Stonehenge. Open University geologists have contradicted claims that the Stonehenge bluestones were dug by Bronze Age man from a west Wales quarry 380 km away. They suggest in the *Oxford Journal of Archaeology* that the stones were moved from the Preseli Hills to Salisbury Plain by glaciers during the Ice Age. Prof. Olwen Williams-Thorpe said she and her team had used geochemical analysis to trace the origins of axe heads found at Stonehenge. 'Axes found at or near Stonehenge are very likely to be from the same outcrops as the monoliths and could even be made of left-over bits of the monoliths.' *BBC News, June 2006*

Qin's tomb scanned. A magnetic scan of the tomb of China's first emperor has detected a large number of coins, suggesting that Qin, who founded China's first imperial dynasty, was buried with his state treasury. Qin, who ruled from 221 to 210 BC, is already renowned for the thousands of terracotta statues of soldiers found buried around his immense tomb outside the former imperial capital of Xi'an. Archaeologists have refrained from opening Qin's tomb until they can decide on how to preserve the treasures it is believed to contain. *Associated Press, October 2005*

Earliest evidence of maize farming in Mexico. A Florida State University anthropologist has new evidence that ancient farmers in Mexico were cultivating an early form of maize about 7 300 years ago, 1 200 years earlier than previously thought. Prof. Mary Pohl conducted an analysis of sediments in the Gulf Coast of Tabasco and concluded that people were planting crops around 5300 BC. The shift from foraging to the cultivation of food laid the foundation for the later development of complex society and the rise of the Olmec civilization, Pohl said. During her field work in Tabasco seven years ago, Pohl found traces of pollen from primitive maize and evidence of forest clearing dating to about 5100 BC. Pohl's current study shows that maize was present at least a couple of hundred years before the major onset of forest clearing.

Proceedings, National Academy of Sciences, 9-13 April 2007

origins centre

The Origins Centre offers visitors a unique experience of Africa's rich, complex and sometimes mysterious past. Combining cutting-edge technology with the creative vision of South Africa's foremost artists, the narrative structure of the museum takes visitors through an extraordinary journey of discovery.

The journey begins with the origins of humankind in Africa and then moves through the development of art, symbolism, technology – the very things that give us our humanity. The journey then continues through the destruction of the great and diverse southern African rock art traditions – the world's oldest continuous art forms – at the hands of colonists, before ending, more positively, with the re-discovery of these ancient masterworks in a contemporary world.

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Café fino serves coffees and light meals.

ORIGINS CENTRE is situated at 1 Yale Road, Wits University (East Campus), Braamfontein, Johannesburg.
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WE ARE WHO WE ARE BECAUSE OF WHO WE WERE

INTERNATIONAL AWARD FOR BUSHMANS KLOOF ARCHAEOLOGIST

Rock art researcher Siyakha Mguni has been awarded the *UK Antiquity Journal* 2006 Ben Cullen Prize for his paper 'King's monuments: Identifying "formlings" in southern African San rock art paintings'. This followed closely on Mguni's discovery of a rare rock art site at Bushmans Kloof Wilderness Reserve and Retreat in the Cederberg Wilderness Area, of which he is the resident archaeologist and curator.

The Ben Cullen prize is presented to the best paper published by a novice. Mguni's paper demonstrates that the complex images found in rock art known as 'formlings' actually depict or evoke the equally complex architecture of anthills. Presented in cutaway and full of metaphorical references, they go beyond the image into the imagination.

Siyakha Mguni is in the process of recording, documenting and researching an estimated 130 rock art sites at Bushmans Kloof. A database linked to a Geographical Information System will culminate in an integrated Rock Art Management Plan. Mguni is also involved in the Living Landscape Project, a community-based heritage initiative based in Clanwilliam. A collaboration between the University of Cape Town and Bushmans Kloof, the project is dedicated to creating a model archive of rock art in the south-western Cape with the aim of preserving this legacy.

Mguni served on the committee of the Trans-Vaal Branch while he was studying at the Rock Art Research Institute at Wits University. See page 5.

A GREAT IDEA FOR A GIFT

Ideas for gifts for people that are special to us are not always easy to think of. We sometimes really have to scratch our heads to come up with a suitable gift for our loved ones and good friends for birthdays, Christmas and other special days.

Have you ever considered giving a year's membership subscription of the South African Archaeological Society? For that special person who would enjoy sharing your interest in archaeology and related fields, a membership subscription to ArchSoc could be just the gift you are looking for.

Membership of the Society in 2008 will only cost R185 for an individual and R200 for joint membership. Give it some consideration. You may just make someone very happy.

WORLD ARCHAEOLOGY

Who were the first Americans?

For decades many archaeologists have believed that the first Americans belonged to the Clovis culture – hunter-gatherers who lived in parts of North America roughly 13 000 calendar years ago. A new study counters this notion by showing that the Clovis culture, characterised by sophisticated stone tools, is nearly 500 years younger than previously thought and may have lasted for as little as 200 years.

The 'Clovis-first' model posits that the original Americans crossed a land bridge linking Siberia and Alaska during the last ice age and headed south down the eastern side of the Rockies through a gap in the two ice sheets that covered Canada. When they got beyond the ice, they dispersed rapidly, reaching the southern tip of South America roughly a thousand years later. This picture has been challenged in recent years, most notably by the discovery of archaeological remains in Chile and Wisconsin that have been dated to over 14 000 years ago.

Michael Waters of Texas A&M University and geochemist Thomas Stafford of Stafford Research Laboratories have re-evaluated the age of Clovis artefacts, many of which were dated in the 1960s and 70s using carbon-dating techniques that are now obsolete. They used a technique called accelerator mass spectrometry, which requires much less material and delivers more precise results. Clovis technology turns out to be younger than previously thought – 13 100 years rather than 13 600 – and to have lasted only 200 to 350 years. That is not long enough for people to reach the southern tip of the Americas, says Waters, who believes instead that the Clovis culture spread through a pre-existing population.

Although the re-analysis is considered a landmark finding by other researchers, it is felt that the arguments would be stronger if material from more than just 11 sites had been analysed. The exclusion of the Aubrey site in Texas – believed to be one of the oldest Clovis sites – is considered particularly worrying. However, many sites were excluded out of concern for the quality of the artefacts.

Science/Nature, March 2007

Tool find suggests earliest Europeans

Caves in south-eastern Italy have yielded evidence of the earliest human settlement in Europe, fuelling a long-running debate over when the European continent was first colonised. The evidence at Pirro Nord in Puglia consists of sophisticated tools and a large quantity of vertebrate fossils. Giulio Pavia, a palaeontologist at Turin University, reported that the artefacts date from between 1,7 and 1,3 million years ago.

The oldest clear record of our human ancestors' journey out of Africa has been found in the Caucasus, which are commonly considered the dividing line between Asia and Europe. Five skulls, dating to 1,8 million years ago, were found in Dmanisi in Georgia. In Asia, 1,6 to 1,7 million-year-old remains in China and 1,8 million-year-old remains in Indonesia suggest that hominids colonised eastern and south-eastern parts of the continent very quickly. The first colonisation of Europe, however, has remained a matter of continuous debate. Until the mid-1990s it was widely believed that hominids arrived in Europe around 500 000 years ago, after travelling across the Strait of Gibraltar from north Africa. But findings of human remains and tools at various sites in Spain, dating from either 800 000 or 1,2 and 1,3 million years ago, suggested that Europe's colonisation occurred far earlier.

'In this context, the finding at Pirro represents the first clear data suggesting that the first arrival of humans to Europe was probably contemporaneous to the colonisation of Asia at the start of the Early Pleistocene,' said Spanish professor of prehistory Bienvenido Martínez-Navarro. The Italian researchers believe the discovery supports the theory that hominids arrived in Europe following the route of the Levantine Corridor, between Israel and Jordan. Fossils of vertebrates unearthed at Pirro included several large mammals, as well as various species of birds and reptiles: 20 reptile and amphibian species, 47 bird species and more than 40 mammal species, Pavia said.

Discovery News, 31 October 2006

AFRICAN ARCHAEOLOGY

Skull first proof of human migration theory

A 36 000-year-old skull from South Africa provides the first fossil evidence that modern humans left Africa 70 000 to 50 000 years ago to colonise Eurasia, research suggests. 'Until a few years ago, [migration] was largely just a theory based on some genetics,' said anthropologist Ted Goebel at Texas A&M University. 'We're beginning to accumulate evidence ... that supports this model.' Scientists today can only theorise about how anatomically modern humans, who appeared in East Africa by 195 000 years ago, spread across the continent to the Middle East and then Europe. The mystery endures in large part due to the scarcity of human fossils in sub-Saharan Africa dating to 70 000 to 15 000 years ago, Goebel says.

The skull study was led by Frederick Grine, an anthropologist and anatomist at Stony Brook University, Long Island. The fossil was originally unearthed from a riverbed near Hofmeyr in 1952, but was never accurately dated. Grine says he was struck by its similarities to the skulls of the first modern humans found in Europe. This inspired him to re-examine the skull. Unable to date it via traditional radiocarbon techniques, Grine sent sand grains pried from the skull's braincase to Oxford University. There Richard Bailey and colleagues used advanced optical and uranium-dating techniques to determine when quartz crystals in the sand were last exposed to sunlight. Katerina Harvati of the Max Planck Institute then compared the skull to those of Neandertals, members of present-day ethnic groups, and European humans from the Late Ice Age (from 35 000 to 11 500 years ago). The skull bore surprisingly little resemblance to the Khoe-San, who have occupied South Africa for at least 15 000 years. The skull's closest affinities were to people from Europe from the Late Ice Age. 'This would indicate to me that the skull is very similar to what we would have seen in eastern Africa at the same time. In other words, when I look at this skull, it looks like the most recent common ancestor of all modern people.'

Science/National Geographic News, 12 January 2007

World Archaeological Congress 2008

The Sixth World Archaeological Congress (WAC-6) will be held at the University College Dublin, Ireland, from 29 June to 4 July 2008. WAC is committed to diversity and to redressing global inequities in archaeology and WAC-6 will continue to facilitate the participation and empowerment of indigenous peoples and researchers from economically disadvantaged countries. See www.ucd.ie/wac-6 for further details.

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 rock art, palaeontology, geology, etc. 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.

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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 2008 are as follows: Individuals: Single – R185; Joint/Family – R200; Full-time students – R130; Africa – R200; Overseas – R350. Institutions: Local – R350; African – R370; Overseas – R700.

The Digging Stick

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