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PRELIMINARY RESULTS FROM ARCHAEOLOGICAL INVESTIGATIONS AT SUDWALA CAVES, MPUMALANGA, SOUTH AFRICA

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ABSTRACT
People seldom used deep cave systems during the late Holocene in South Africa. Consequently, excavations were conducted in 2010 to establish the origins of artefacts found during tourist infrastructure developments at Sudwala Caves. These excavations focused on an area near the mouth of the cave where there was, what appeared to be, intact deposit. Four squares were excavated, bearing cultural remains that point to three use episodes. The first use episode, indicated by Marateng pottery, related to the people of Bokoni. The second, characterised by undecorated pottery, could be linked to Swazi speakers, who were known to have used the caves as a refuge during the 1800s. The third use episode, associated with historical objects, signified cave usage during the second half of the 20th century as a tourist attraction. Material culture removed from the caves during the development of tourism infrastructure, however, might point to a much longer use history.

Keywords: Sudwala Caves, farming communities, Bokoni

1. Introduction

Southern African caves, such as Wonderwerk Cave, Sibudu Cave, Peers Cave, Lion Cavern, Historic Cave, and Lepalong Cave, contain rich archaeological deposits and show repeated use over hundreds, sometimes thousands, of years (e.g., Thackeray et al. 1981; Hall 1995; Backwell et al. 2008; Stynder et al. 2009; Esterhuysen 2010; Porraz et al. 2015; Morris 2016; Bader et al. 2021). Boomplaas Cave, for example, was used as a residential site during the Pleistocene, and as an outlying stock post and short-term shelter by herders during the last 2000 years (Von Den Driesch & Deacon 1985; Pargeter et al. 2018). Wonderwerk Cave also contains Earlier (ESA), Middle (MSA) and Later Stone Age (LSA) deposits, as well as LSA rock art that points to ritual or religious purposes (Thackeray et al. 1981; Morris 2016). Caves, such as Lepalong, Historic and Echo (Fig. 1: EC), were used as refugia during periods of unrest or upheaval (Mönnig 1978; Hall 1995; Pikirayi & Pwiti 1999), while other caves were used for storage (Wood et al. 2009; Morris 2016). Caves were also mined for fertiliser, ochre, and other precious materials (Unknown Author 1911; Morris 2016; Bader et al. 2021).

How these caves were used depended on numerous factors, including their geological or landscape characteristics (e.g., their location, depth, and the surrounding environment), the economic and political context at the time, and the cultural and religious beliefs of the people who used, or avoided, them. Belief systems appear to play a distinct role in the Holocene use of deeper cave systems, with LSA hunter-gatherer use and rock art being restricted to the natural daylight zones at Wonderwerk Cave. This constituted a significant shift from their more prolific use during the MSA (Chazan & Horwitz 2009; Morris 2016). Similarly, the use of deeper caves by farming Communities is restricted to mining (e.g., Oxley Oxland & White 1974; Friede 1976; Grant 1994; Chirikure 2015) and ritual purposes (e.g., the use of Matonjeni Cave in Zimbabwe; Daneel 1971; Bucher 1980), or in times of trouble (e.g., Hall 1995; Esterhuysen 2010).

In this context, the multiple use episodes of the Sudwala Caves (Figs 1 & 2) are of interest. This cave system is in the Crocodile River Valley at the eastern end of Schoemanskloof, one of the easier routes through the Drakensberg escarpment that separates the Highveld from the Lowveld in northeastern South Africa. In the 20th century these caves became a popular tourist attraction that is well-known for its crystal caves, speleothems and fossilised plant remains (Unknown Author 2021).

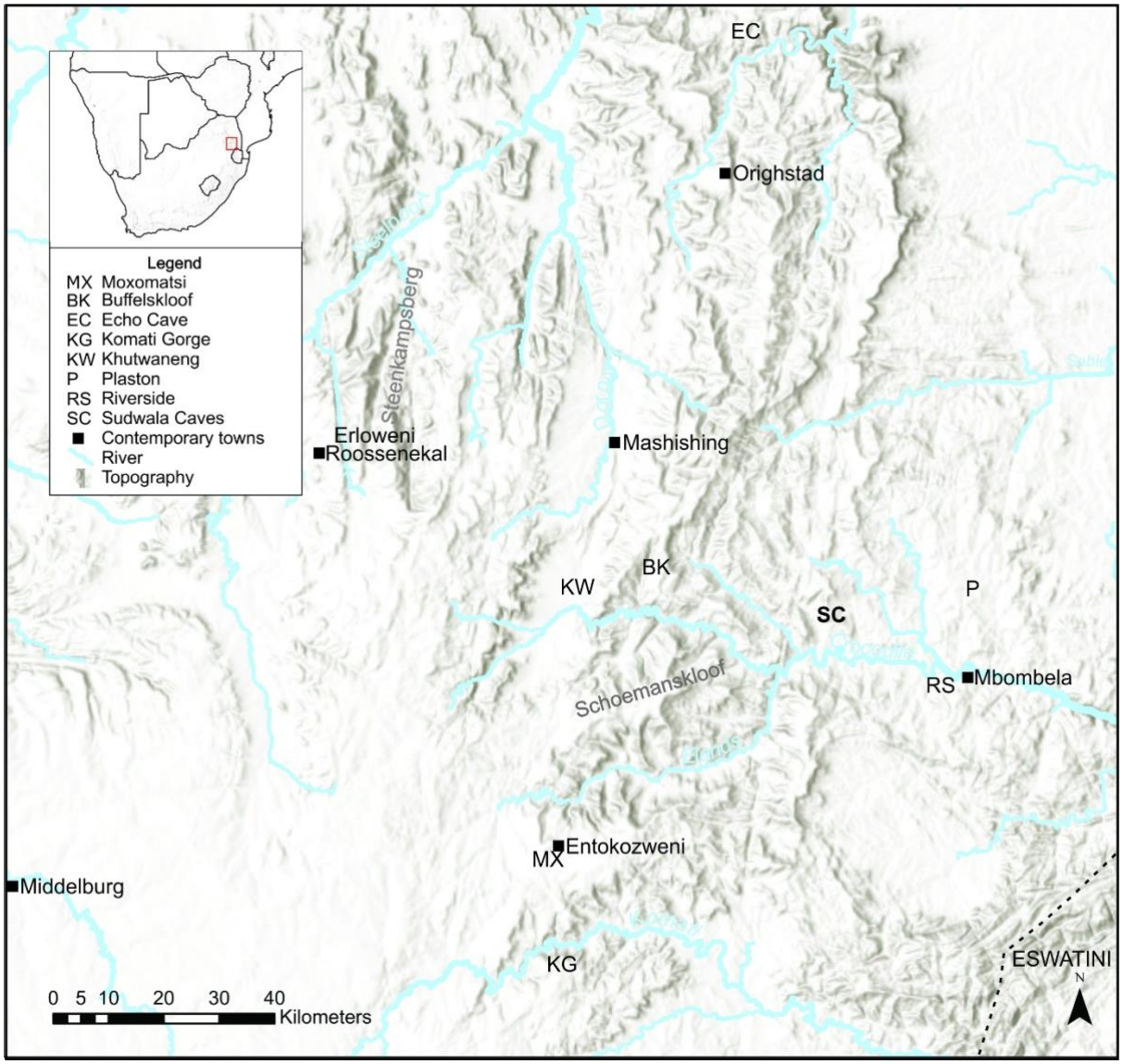

Figure 1. Map of the area surrounding the Sudwala Caves (SC) and location of sites mentioned in this paper.

During the development of tourist infrastructure, including the construction of stone walls and a paved stepped amphitheatre, soil and possibly archaeological deposit were removed from/moved in the cave. This led to the discovery of archaeological artefacts, including ESA handaxes, K2 and Marateng ceramics, as well as firearms. The provenance of the collected objects is uncertain, and in the absence of sound archaeological and historical research on the caves it was unclear how they articulated with the regional context. During 2010, two test excavations were conducted to explore the use of the cave complex through the later Holocene sequence. We report the results of these excavations here, starting with a review of the research context and regional settlement history.

2. Regional settlement history

Prior to the 1900s

Farming communities had moved into northeastern South Africa by the 4th century AD (Klapwijk 1974; Klapwijk & Huffman 1996) and expanded to the area around the Sudwala Caves in the following

centuries. To the east of the Sudwala Caves the sites Riverside and Plaston (Fig. 1: RS & P) were occupied in the 6th and 8th centuries, respectively (Evers 1977; Huffman 1998), and to the northwest Early Farming Communities (EFC) had settled in the area around Mashishing (formerly Lydenburg) by the 7th century AD (Evers et al. 1982; Whitelaw 1996). Initially these EFC settlements were scattered, but by the 10th century AD more complex systems and related site-clustering started to develop in the Mashishing area (Evers & Hammond-Tooke 1986).

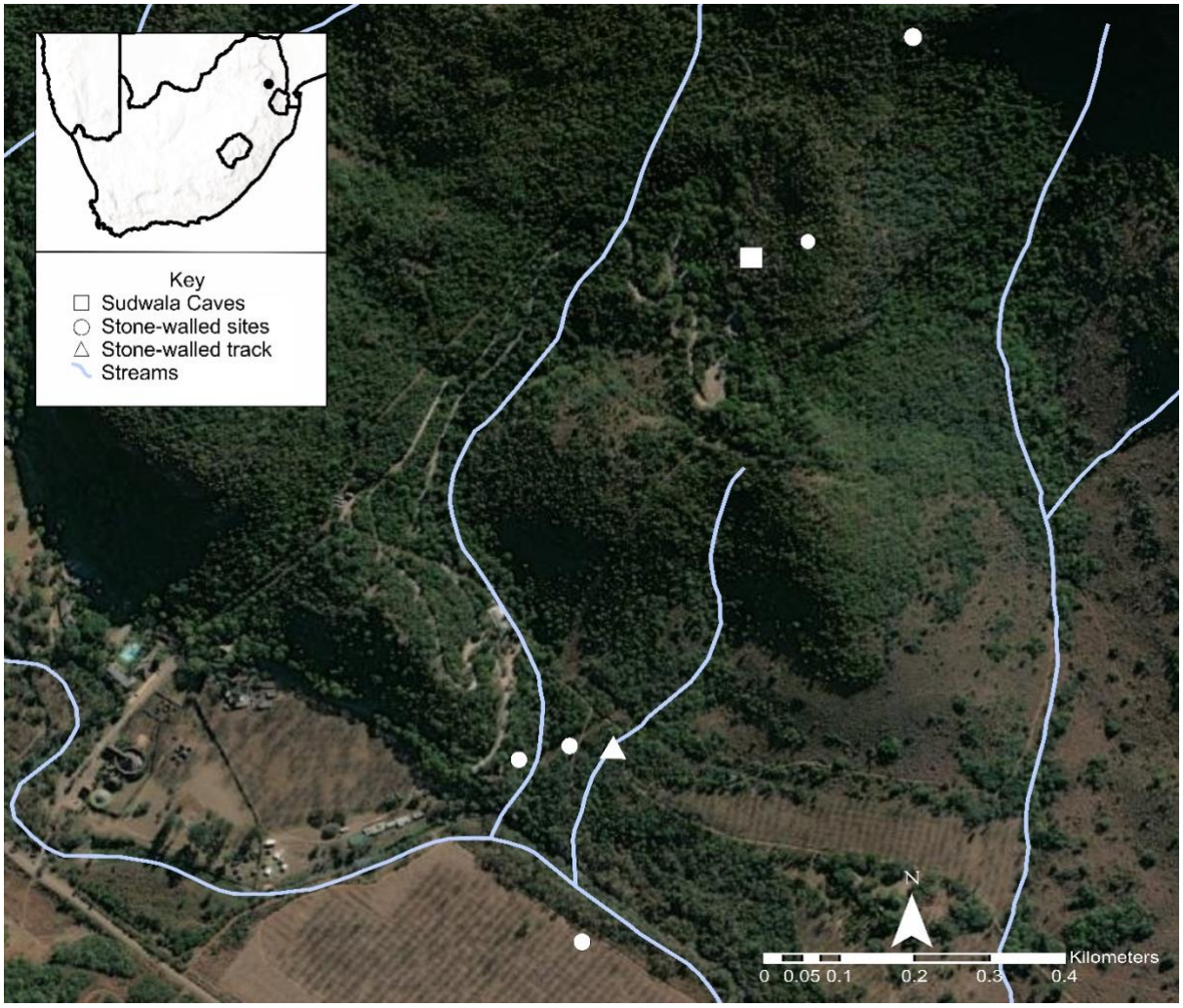

Figure 2. Map showing the location of the Sudwala Caves, five surrounding Bokoni sites and a possible stone-walled Bokoni track. Map inset shows the location of the Sudwala Caves within South Africa.

Several of these first millennium farming communities engaged in regional exchange and trade. Initially salt was a key commodity (Evers 1974a, b; Antonites 2013, 2016), but after AD 800 international trade goods, such as glass beads and ivory, were exchanged along networks that reached west into Botswana (Wood 2011) and south into KwaZulu-Natal (Couto et al. 2016; Gavin Whitelaw pers. comm. July 2018).

Population density further increased when additional farming communities, visible through the Moloko pottery they made, moved into the area early in the second millennium AD. In the Lowveld, specialist metal production centres developed (van der Merwe & Scully 1971; Killick & Miller 2014; Moffett 2017) and by the 17th century several historically know polities started to expand into the Eastern Highveld. These included southern Ndebele, Pedi and Bokoni Kingdoms (Delius 1983; Schoeman 1998a, b; Delius & Schoeman 2008; Maggs 2008; Delius et al. 2012). By the 19th century, the Swazi Kingdom was also a significant player in regional processes (Bonner 1977, 1978, 2002; Makuru 2008).

Between the 16th and the mid-19th century, Schoemanskloof, where the Sudwala Caves are located, formed part of Bokoni. The Bokoni archaeological zone stretched between the towns of Carolina in the south and Ohrigstad in the north. The Steenkampsberg formed the western border and the Drakensberg the eastern edge of this archaeological zone. Bokoni settlements are characterised by stone-walled towns and villages, which comprise circular homesteads surrounded by terraces with interconnecting paths and roadways (Delius & Schoeman 2008; Maggs 2008; Delius et al. 2012; Widgren et al. 2016; Birin et al. 2021).

Excavations of Bokoni settlements have recovered Marateng pottery, glass beads and metal implements (Evers 1975; Collett 1979, 1982; Delius & Schoeman 2008, 2010; Maggs 2008; Delius et al. 2012). Glass beads were an important commodity in the east coast trade, and their presence, Bokoni's location, and literature sources, suggest Bokoni played a role in the trade networks (Evers 1973; Schoeman 1997; Delius & Schoeman 2008; Coetzee 2017). Cattle tracks and terraces, the remains of metal hoes, and evidence of domesticated plants and animals have been used to infer that the people of Bokoni were mixed farmers (Delius & Schoeman 2008). It is possible that cattle and surplus grains formed part of the items that were traded to the coast (Delius & Schoeman 2008). Trade routes, along with the location of resources, for example, water and wood, as well as soil fertility, climatic conditions and regional conflict, may have influenced settlement distribution as has occurred elsewhere across South Africa (Maggs 1980; Greenfield et al. 2005; Delius et al. 2012).

Evers (1971), Collett (1979, 1982) and Coetzee (2017) noted that many of the Bokoni settlements were clustered on gentle sloping grassland hills in open valleys close to water sources, as well as in inaccessible mountainsides. Delius et al. (2012; also see Birin et al. 2021) proposed that these sites were linked to different periods of occupation. Indefensible, open-air sites such as those in the Komati Gorge (Birin et al. 2021), Moxomatsi (Masolo 2020), and Khutwaneng (Collett 1979, 1982; Henshall 2016; Solomon 2016) (Fig. 1: MX & KW), formed part of the first and second occupation phases. Whereas sites that are difficult to access, such as the kloofs near Khutwaneng and Buffelskloof (Delius & Schoeman 2008; Hattingh 2014; Schoeman et al. 2019) (Fig. 1: BK), formed part of the third occupation phase and were used from the late 18th century to the early 19th century, when violence swept through the region during an era commonly referred to as the *mfecane*. As a result of the growing tensions and constant attacks, sites throughout the broader region, for example the region between Middelburg and Mbombela, show increased fortifications. The Ndzundza capital, Erloweni, near Roossenkal, is one such site (Schoeman 1997, 1998a, b, 2020).

The *mfecane* was in part the result of expanding states, and associated competition over trade and wealth between and within societies at the beginning of the 1800s (cf. Delius 1983; Eldredge 1995; Schoeman et al. 2019). The rise of several power blocks also played a role. These included the Pedi polity, which from the late 1700s embarked on a process of aggressive territorial expansion into, amongst others, Bokoni and Ndzundza Ndebele territories (Delius 1983). To the southeast the Zulu state under the leadership of Shaka, the Ngwane polity (which later became the Swazi state) under the leadership of Sobhuza, and the Ndwandwe polity of Zwide, also embarked on expansionist processes. Some (e.g., Hall 1976; Schoeman et al. 2019) have suggested that climate change and resulting droughts and famine also played a significant role in the conflict. This interpretation is not shared by Wylie (2006) and Cobbing (1988) who challenged traditional assumptions and argued that the *mfecane* was caused by the increase in slave trade. Cobbing's challenge reshaped *mfecane* scholarship, but his data have been contested; for example, Eldredge (1995) pointed out that slave trade at Delagoa Bay did not play a significant role before the 1820s.

By the early 1800s the Koni, Pedi and Ndzundza heartlands were attacked, and people scattered to seek refuge. Some attributed these attacks to Mzilikazi's Ndebele given that oral traditions record their movement through the area (Rasmussen 1975; Schoeman 1997). It is also possible that the attackers were the Ndwandwe, but their defeat in 1826 caused them to fade from history (Delius & Schoeman 2008; Makuru 2008; Wright 2008). The impact of this conflict was exacerbated by the arrival of small groups of Boers, who settled in Mpumalanga. Although the Boers formed a small community, their horses and firearms gave them the upper hand in battle, and they entered into strategic alliances with

some local African communities (Delius & Cope 2007).

The Boers' move into northeastern South Africa was partly motivated by their desire to control the lucrative and well-established trade networks linking the interior to the Mozambican coast (Delius & Cope 2007; Esterhuysen & Smith 2007; Coetzee 2008; Delius & Schoeman 2008). Once settled, they started to acquire land for settlement and farming. This was bound to lead to conflict, because in the context of expanding populations and polities land was already at a premium. In some cases, land was traded for arms and ammunition, in many others land was acquired illegally and without the consent of the African communities living there. In some instances where land was taken over, people had to work for settlers. Payment for their labour included cattle, and in some cases, firearms (Delius & Cope 2007).

Parallel to Boer expansion, the Swazi state extended their raiding into the Mashishing (formerly Lydenburg), Carolina and Ermelo areas, at times displacing (Makuru 2008), killing, or enslaving people (Prins 1999) already living in the area. Internal Swazi disputes also impacted the region (Makuru 2008). Relevant to the archaeology of Sudwala are the disputes between Mswati, who ruled Eswatini during the early 1800s, and his brothers Malambule, Fokoti and Somcuba. Somcuba used the conflict between Mswati and his other brothers to expand his own power base, to the point where he was de facto ruling parts of Mpumalanga, which included entering into treaties with the Boers. Because of the conflict with his brothers, Mswati was distrustful of Somcuba and acted to limit his power (Bonner 1978).

During the 1840s Somcuba had been installed in a village in Mpumalanga and he oversaw a large herd of Mswati's cattle. The relationship between the brothers deteriorated when Somcuba treated the herd of cattle as his own and refused to send them to Eswatini. In addition, Mswati realised that the proximity of Somcuba's settlement to the Boers had created a strong relationship between the two communities and that he could no longer depend on the Boers for support (Bonner 1978). Mswati sent troops to attack Somcuba, but his forces were repelled (Bonner 1978). Oral histories recount that Somcuba and some of his forces took refuge in caves, including in the Sudwala Caves. Here, Somcuba's commander, Captain Sidwaba, guarded the entrance until a Lydenburg Commando saved them from the attack. Subsequently, the area became part of Boer territory and Somcuba lived in a territory controlled by the Ohrigstad Boers until he was defeated in battle (Bonner 1977, 1978). The cave is said to have been named after Sidwaba (Unknown Author 2021).

Use of the Sudwala Caves during the 1900s

Since the second South African War (AD 1899-1902), tales of the 'Kruger Millions' have abounded. This is gold that was supposedly hidden by the Boer Republic for later use in their campaigns against the British Forces. The Sudwala Caves are one of the locations in which treasure was thought to be hidden, and the pursuit of this treasure led to several illegal excavations. This, however, was not the only treasure that was hunted because, as Hardingham (1943) noted, people had romantic views of caves, which included the idea that they were used by bandits and smugglers.

One such excavation was by two men, identified only as De Wet and Enslien. During 1910 and 1911, they searched for treasure while pretending to dig for guano. This treasure is rumoured to have consisted of five pots of gold sovereign and one pot of diamonds. While rummaging through the caves they found several African pots and associated artefacts, but they were regarded as unimportant and with echoes of Hall's (1905) looting of Great Zimbabwe, were cast aside. The area where the treasure was rumoured to occur was completely dug out, but there is no record that treasure was ever found (Unknown Author 1911). Despite the absence of any treasure, valuable guano was found and guano mining continued after the quest for treasure was abandoned. It is said that by April 1911, 250 bags of guano had been removed from the caves (Unknown Author 1911).

In the 1960s the caves, and the farm on which they are located, were bought by Phillipus R. Owen. He wanted to preserve the caves and to make them accessible to the public. Some of the earliest tourism infrastructure developments resulted from his endeavours. These, among others, included the installation of the first electrical lighting and the development of benching, which required the removal of large amounts of soil containing archaeological deposit (Phillipus Owen pers. comm. April 2010).

In addition, one of the earliest developments was the P.R. Owen Hall, which functions as an amphitheatre. The hall was used for several concerts, including a performance by Ivan Rebroff, a famous Russian opera singer, in July 1970. The caves were also used during the production of various films, such as *Creatures the World Forgot* (Phillipus Owen pers. comm. April 2010). However, this use of the caves was problematic since Mr Owen and his staff could not monitor the large volumes of people, and vandalism resulted. Consequently, concerts inside the caves were limited (Phillipus Owen pers. comm. April 2010), but guided tours in the caves are still an attraction (Unknown Author 2021). During the 1960s the caves and its natural wonders were surveyed and mapped as part of the tourist infrastructure developments. The latter also included display cases that were built at the entrance of the cave. Archaeological artefacts are on display in these, yet the focus of the guided tours is not archaeological but rather, on the natural beauty of the cave system.

3. Materials and methods

Surveys

The authors could not find any published archaeological research pertaining to Sudwala Caves or the surrounding area. To better understand the use of the main cave, its occupation phases and the surrounding landscape, a foot survey was conducted in April 2010. It was difficult to see artefacts on the surface due to dense vegetation on the hills surrounding the caves, nevertheless several sites were identified (Fig. 2).

Excavations

The extensive guano mining and tourist infrastructure developments left only a small portion of what appeared to be in-tact deposit near the main cave entrance. This area was situated in the far right-hand corner of the cave entrance, against the cave wall and behind the tourist infrastructure developments (Figs 3 & 4).

Four squares, namely B, R, P and Q, were excavated (Fig. 3) in 2010. Stratigraphy was followed during the excavations, where possible; 5 cm spits were dug where there was no visible stratigraphy. All sediments were sieved using 5 mm and 1 mm wire mesh. A combination of dry and wet sieving was performed to eliminate clay masses and recover small artefacts, for example beads and microfauna. Artefacts were stored in labelled plastic and paper bags. Basic excavation recordings included photographs, section and plan drawings, as well as field notes.

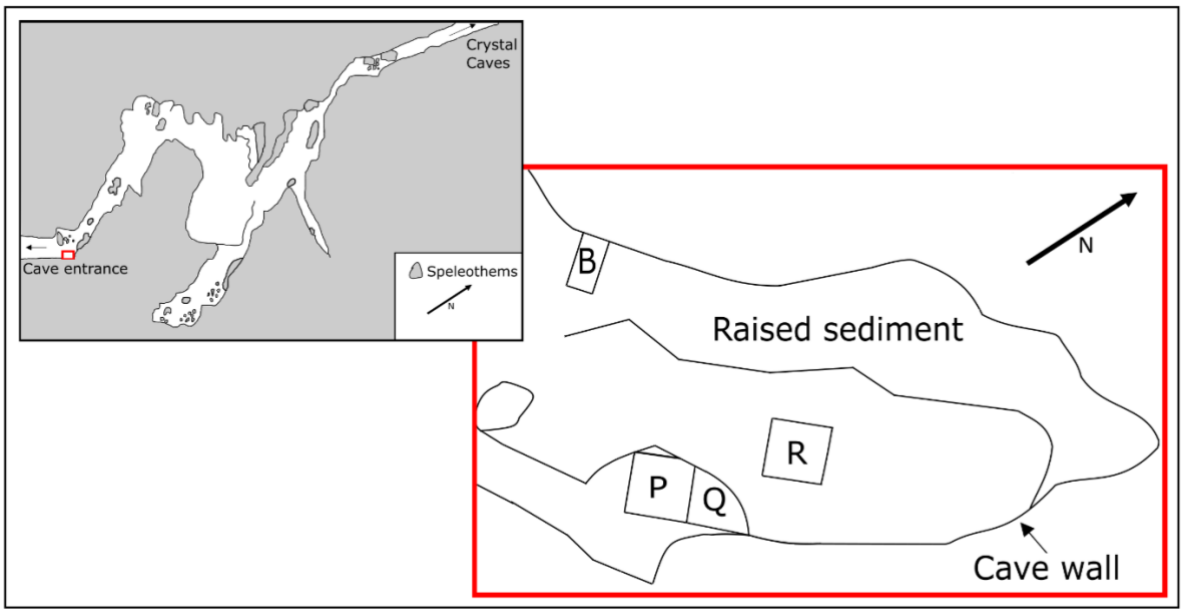

Figure 3. Map of the Sudwala Caves and site plan (adapted from Green et al. 2015). Note the varying sizes of the excavation squares.

Figure 4. Photograph of the excavation area at the cave entrance.

Analysis

Bones were sorted into identifiable and unidentifiable specimens. The comparative collection at the Ditsong National Museum of Natural History was used to determine the species or size class (i.e., Bovid 1 to Bovid 4) of the specimens. During analysis, modifications to the bones, e.g., cut marks and burns, were also noted.

Pottery sherds were analysed visually and sorted into categories based on the portion of the vessel they originated from, as well as their decoration. Rim sherds were used to extrapolate the rim diameters of the vessels they originated from. A standard diameter measurement template was used (cf. Jordaan 2016).

4. Results: Surveys

Sites located in the immediate vicinity (i.e., a 1 km radius) of the caves included five stone-walled settlements, one terraced site, and a possible cattle track. Sites were classified using the criteria discussed in Coetzee (2017). Four were level one sites, which comprise single, lone-standing stone-walled enclosures. The remaining stone-walled site was classified as a complexity two site, which comprises two or more complexity one sites either grouped together or connected.

5. Results: Excavations

Square B

Square B abutted the cave wall (Fig. 3) and was 1 x 0.5 m. The deposit was unstratified and comprised dark brown clay soils with fragments of red and yellow clay. Bedrock was encountered approximately 5 cm below the surface. This square may have been disturbed given the proximity of cabling and lighting that form part of the tourist infrastructure. It also yielded little material culture (Tables 1-5 in the following section).

Square R

Square R was in the centre of the intact deposit and was 1 x 1 m (Fig. 3). Two main stratigraphic layers were identified. One layer comprised dark brown soils and the other, red soils. Bedrock was reached 30 cm below the surface (Fig. 5). Square R was rich in material culture, including ceramics and beads, as well as faunal remains (Tables 1-5 in the following section).

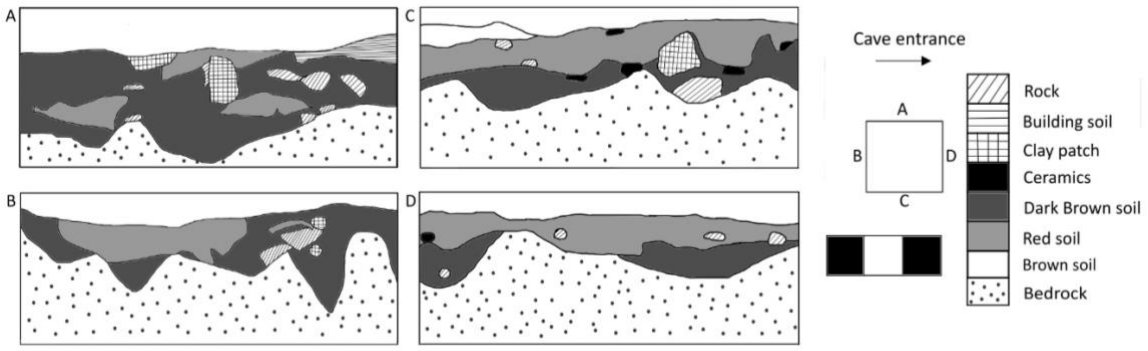

Figure 5. Section drawings from Square R (scale=30 cm).

Square Q

Square Q was on a slight slope, next to the cave wall (Fig. 3). Four distinctive stratigraphic layers were identified. The layers consisted of dark brown, red, brown and speckled red, soils. The excavation ended when bedrock was encountered 35 cm below the surface (Fig. 6). Finds included ceramics, beads, faunal remains, and shell (Table 5 in the following section). Due to its location against the cave wall, this square was not 1 x 1 m (Fig. 3), but rather 0.9 x 0.9 m on sides that did not abut walls.

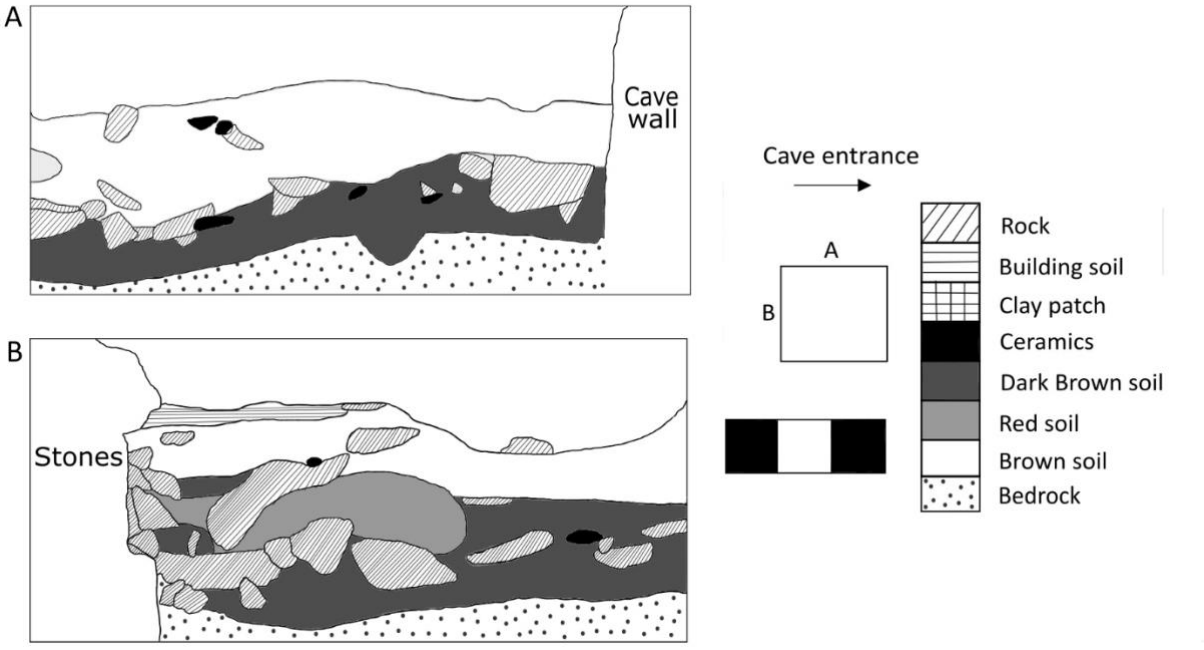

Figure 6. Section drawings from Square Q (scale=30 cm).

Square P

Square P was adjacent to square Q, near the display cases (Fig. 3). This shallow 1 x 1 m square was excavated to a depth of 5 cm in some areas, but deposits were barely 1 cm deep in others. Two soil colours were noted, namely red and brown. The shallow deposit depth was probably due to the removal of a substantial amount of the topsoil during tourist developments in the cave.

6. Results: Finds

Ceramics

A total of 1641 ceramic sherds were collected at the Sudwala Caves. Most of these sherds (n=1328) were recovered during the excavations, whereas the rest were found by Sudwala Caves' personnel during infrastructure developments that were subsequently catalogued as out of context.

The ceramics were distributed unevenly throughout the squares and stratigraphic layers, with squares R and Q yielding the highest number of sherds. Decorated vessels comprised a very small percentage of the total amount of excavated ceramics (Table 1). The remaining sherds were burnished either red or black (Fig. 7). As a result of the fragmentary nature of the ceramics from the archaeological excavation, it was difficult to identify the ceramic style. Only Marateng facies pottery could be identified due to its distinctiveness (Fig. 7). The extrapolated rim diameters suggest that the assemblage included storage vessels (Table 2) (cf. Lawton 1967). Ubiquitous Marateng style vessels made up a large portion of the assemblage collected by the cave's staff; however, pottery that resembled K2 ware from the Shashe-Limpopo Confluence Area was also observed and some of it is on display in the cave's entrance. This unburnished ware had deep incised, filled-in half-moons on the shoulders (for more on K2 pottery, see Meyer 1980; Huffman 2007).

Table 1. Distribution of ceramics (n=1641), including materials without context (dec.=decorated, undec.=undecorated).

Square (soil colour)	Dec. rims	Undec. rims	Dec. neck/shoulder/base	Undec. neck/shoulder/base	Dec. body	Undec. body
B	0	2	0	0	0	23
R (Red)	0	2	0	2	0	83
R (Dark Brown)	1	15	0	1	1	234
Q (Brown)	0	35	1	4	3	615
Q (Red)	1	10	0	1	2	171
Q (Dark Brown)	1	5	0	1	1	149
Q (Speckled Red)	0	3	0	0	0	50
P (Brown)	0	9	0	0	1	81
No context	0	0	0	0	0	133
Total	**3**	**81**	**1**	**9**	**8**	**1539**

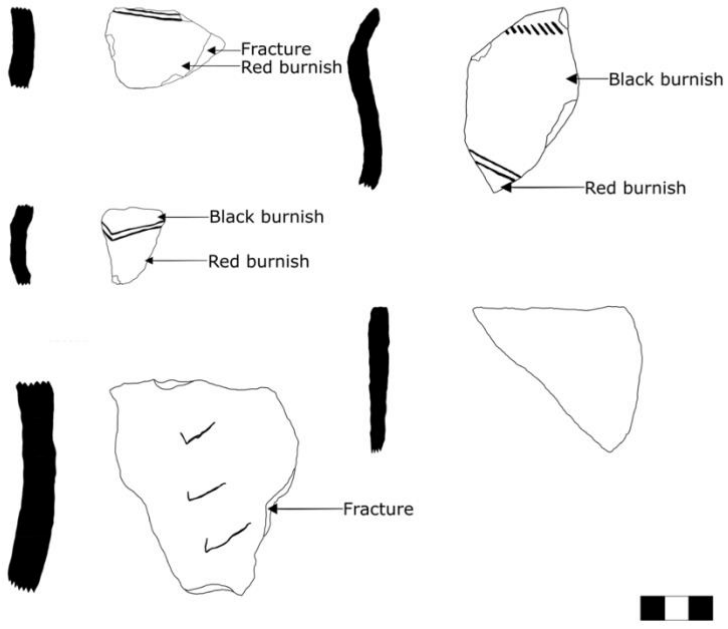

Figure 7. Examples of ceramics found during the excavations. Marateng ceramics from the red soils of Squares Q and R (top left and right, and middle left). Undecorated rim sherd from the brown soils of Square Q (middle right). Undecorated sherd from a storage vessel (bottom left), excavated from the brown soils of Square Q (scale=3 cm).

Table 2. Extrapolated rim diameters.

Square (soil colour)	8 cm	16 cm	19 cm	24 cm	34 cm	>34 cm
B	0	0	0	0	0	0
R (Red)	0	0	0	0	0	0
R (Dark Brown)	0	0	3	4	0	0
Q (Brown)	0	3	6	1	0	1
Q (Red)	0	1	2	1	0	0
Q (Dark Brown)	1	0	0	1	0	0
Q (Speckled Red)	0	0	0	2	0	0
P (Brown)	0	1	1	4	1	0
Total	**1**	**5**	**12**	**13**	**1**	**1**

Fauna

A total of 4286 bone fragments were collected during surface surveys, excavations, and salvage operations during the tourist infrastructure developments. Most of these fragments were undiagnostic, but 8.8% were identifiable (Tables 3 & 4). Like the ceramics, identifiable bone fragments were unevenly distributed throughout the squares. Squares Q and R contained the most identifiable fragments.

The most common faunal remains were from rodents. Bovids, however, were also widespread. Remains identified to species level included *Bos taurus* (cattle), *Lepus saxatilis* (shrub hare), *Caracal caracal* (caracal), and *Phocochocrus africanus* (common warthog). The majority of remains identified to a species level were from the out of context materials. *B. taurus* and *L. saxatilis* remains, which formed part of the out of context materials, contained cut marks (Table 3). Additionally, several unidentified bone fragments bore cut marks, or evidence of burning (Table 4).

Table 3. Distribution of all identifiable faunal remains (n=388), including materials without context.

Square (soil colour)	Bov 1	Bov 2	Bov 3	Bov 4	Rodent	Other
B	2	1	0	0	4	0
R (Red)	1	0	0	0	19	0
R (Dark Brown)	6	3	0	0	87	0
P (Red)	0	0	0	0	1	0
P (Brown)	4	0	0	0	2	2 (crab)
Q (Brown)	16	6	3	0	85	1 (large rodent), 2 (crab)
Q (Red)	3	0	0	0	9	2 (crab)
Q (Dark Brown)	5	6	1	0	7	0
Q (Speckled Red)	0	1	0	0	4	0
No context	15	29	19 (*Bos Taurus*), 14 (1 with cut marks)	8	9	4 (*Lepus saxatilis* with cut marks), 1 *Caracal caracal*, 1 medium carnivore, 2 *Phacochoerus africanus* (common warthog), 1 large mammal, 2 (crab)
Total	**52**	**46**	**37**	**8**	**227**	**18**

Table 4. Distribution of unidentifiable faunal remains (n=4286), some with modifications, including materials without context.

Square (soil colour)	Amount	Burnt	Cut	Worked
B	27	0	6	-
R (Red)	702	4	7	-
R (Dark Brown)	163	0	18	-
P (Brown)	138	0	2	-
Q (Brown)	1082	7	33	1
Q (Red)	361	-	13	-
Q (Dark Brown)	686	-	10	-
Q (Speckled Red)	146	-	10	-
No context	395	57	30	-
Total	**3700**	**68**	**129**	**1**

Metal
Six individual iron beads and two clusters (beads were fused together because of corrosion and could not be counted) of copper beads, as well as unidentifiable metal fragments, were found in the excavations. These finds were distributed in the upper layers of squares Q and R. The out of context material also included metal items (Table 5). Metal objects found during square surface sweeps, before excavation, were linked to modern infrastructure developments.

Beads
Various types of beads formed part of the assemblage. Copper, iron, glass, and ostrich eggshell beads (OES) were found. OES beads were the most abundant (n=85). Glass and metal beads were rare (Table 5).

Miscellaneous
Shell fragments found during the excavation were identified as *Achatina* and *Barbatia foliate*. Pieces of unidentifiable baked clay were also found (Table 5). Floral remains, including charcoal, were absent from the squares.

Table 5. Miscellaneous finds (*=cluster of copper beads, **=less than 0.5 cm, #=fragments <1 cm).

Square (soil colour)	Metal	OES beads	Glass beads	Metal beads	Glass#	Other
B	0	1	0	0	2	-
R (Red)	1 fragment	5	0	1*	9	1 *Achatina***
R (Dark Brown)	1 unidentified lump, 3 fragments	12	1	6 iron, 1*	7	1 shell fragment**, 3 *Achatina***
P (Brown)	2 wire (<2 cm)	8	0	0	0	Several shell fragments
Q (Brown)	2 fragments, 1 spear point? (0.5 x 20 cm)	6	3	-	1	1 upper grinding stone, several shell fragments
Q (Red)	0	0	0	0	2	Several shell fragments
Q (Dark Brown)	0	30	2	0	1	1 *Achatina***, 1 part of a bi-valve seashell (*Barbatia foliata*), several shell fragments
Q (Speckled Red)	0	1	1	0	0	-
No context	1 implement, 1 screw, 1 unidentified piece, 1 unknown piece of building material	22	0	0	3	1 upper grinding stone (broken), several shell fragments
Total	**14**	**85**	**7**	**6 iron, 2***	**25**	**5 *Achatina*, multiple shell fragments, 1 part of a bi-valve seashell, 2 upper grind stones**

7. Discussion

Material culture unearthed during tourist infrastructure developments at Sudwala Caves included artefacts on display in the cave entrance (such as ESA tools, K2 pottery, and pistols), as well as several boxes of material in storage that included bone fragments, ceramics, iron implements, and grinding stones (Tables 1, 3-5). Based on these artefacts, it is possible to conclude that the caves were used a multitude of times over millennia. The K2 sherds are particularly intriguing as it could suggest that the Sudwala Caves were on a route linked to the Shashe-Limpopo Confluence Area. However, the damage to the archaeological deposits, caused by looters, miners and developers, is extensive and as a result it is difficult to verify the provenance and authenticity of these artefacts. Without the artefacts' original context, it is problematic to link them to specific occupational periods and thus, it is impossible to gain an in-depth account of the caves' occupational history.

The excavations and subsequent analysis of the artefacts and faunal remains facilitated the identification of three periods of cave use. Two of these use episodes were of long enough duration to leave evidence for subsistence activities, in the form of abundant pottery, possibly used for storage, and faunal remains.

The first episode relates to cave use during the Bokoni period (16th to 19th century AD), and it is represented by the dark brown and red deposits of squares R and Q. The second use episode, represented by the brown layers of deposit, might reflect Swazi use during the early to mid-19th century AD. It may also represent use of the caves by traders. The last use episode is historical (early 20th century AD to

present), and it includes material culture from tourist infrastructure developments, and the use of the site as a tourist attraction. Data supporting these interpretations will be discussed in this section, starting with ceramics.

Marateng ceramics were most frequently observed in the dark brown and red layers of squares R and Q. This ceramic style is present across large swathes of pre-colonial Mpumalanga, including in areas controlled by the Ndzundza (Schoeman 1997, 1998a, b) and Pedi polities (Lawton 1967; Schoeman 1997), as well as in Bokoni (Schoeman 1997; Delius & Schoeman 2008). Using the nearby stone-walled settlements that follow the Bokoni settlement pattern as co-indicators, we propose that people from Bokoni used the caves. Since it was not possible to date the materials directly, we cannot be certain if the artefacts are linked to one period, or multiple periods of use. Noting the inaccessibility of the sites and the caves, this period of use might be linked to the conflict-riddled third phase of the Bokoni sequence, but it also is possible that the caves were used for storage, temporary shelter, or trade-related purposes, which continued through time.

The caves would have been highly suitable for use as a temporary refuge, because of its natural defences and close proximity resources, such as water and wood. The caves are on a well-known historic trade route from the Highveld to the Lowveld, which follows the Crocodile River (Coetzee 2017). As indicated earlier it is possible that the K2 pottery unearthed during infrastructure development could be evidence of this trade in the 11th to 12th centuries. It is less speculative to suggest that the OES beads, as well as the 19th century glass beads, reflect trade running through the area.

The Marateng pottery, and the coarse-grained ceramics with red or black burnish, may represent less transient use of the caves. Marateng pottery is relatively easy to identify and attribute, but the origin of the coarse-grained ceramics is more difficult to trace. Rim sherd diameters indicate that these vessels were larger storage vessels, which speaks to longer term planning, storage or use. Similarly, the grindstones speak to some form of occupation. However, no botanical remains were identified, which makes it impossible to determine which plants were being consumed by the people who occupied the caves.

The faunal assemblage that included rodent and bovid remains might help to clarify the nature of these occupations. Whether the rodent remains are natural, or whether they were trapped for food along with the small antelope present in the assemblage, is unclear (Tables 3 & 4). What is clear is that the assemblage is different from that found at Later Farming Community (LFC) homesteads in Mpumalanga, which are dominated by large- and medium-sized bovids (e.g., Nelson 2009). In contrast, the Sudwala Caves faunal assemblage is skewed towards smaller animals, which suggests that it did not accumulate through large-scale hunting parties, but rather when access to large game was more restricted. This signature read in combination with the rather extraordinary act of reconfiguring a cave as home speaks to times of trouble.

Reconfiguring sites, such as caves, that are not normally residential places into homes was a frequent occurrence in the late 18th and 19th century. Excavations at refugia, for example Lepalong (Hall 1995), Esikhunjini and Erloweni (Schoeman 1997, 1998b), Historic Cave (Esterhuysen 2010) and Buffelskloof (Hattingh 2014; Schoeman et al. 2019), showed evidence of preparation and long-term occupation. This included the remains of structures, such as walls, floors and storage pits. Material remains often mirrored the types of remains that would have been found at open-air sites, including grindstones, remains of foodstuffs, baskets and pottery (Hall 1995; Schoeman 1997; Esterhuysen 2010). This re-creation of normal lives and dwellings, while sheltering, speaks to preparation and an attempt by the refugees who utilised caves to reconfigure these spaces as home (Hall 1995).

There are two moments in the known history of the Sudwala Caves in which it probably acted as a refuge. The first is the late 18th and early 19th century, when the regional troubles forced people in Bokoni to seek refuge in the hills surrounding their towns and villages (Delius & Schoeman 2008; Delius et al. 2012; Schoeman et al. 2019). The second is the use of the caves by Swazi refugees during internal political upheavals of the 1800s, recorded in various sources such as oral traditions and other

literature (Bonner 1977, 1978; Phillipus Owen pers. comm. April 2010). It is possible that the undecorated pottery can be linked to this period of use since it falls into the suggested shape and size of the pottery mentioned for the Swazi potters, by Lawton (1967) and Celliers (2009).

After the Swazi occupation the caves were reconfigured from place of refuge to economic resource. These activities, which included guano mining, treasure hunting and development of tourist infrastructure, were destructive and further blurred the archaeological signatures of previous occupations.

8. Conclusion

Though artefacts on display in the Sudwala Cave entrance suggest a long history of occupation and use, stretching from the ESA to the historical period, only evidence of use over the last 500 years were found during excavations. This is probably due to the destruction of much of the intact archaeological deposit in the 20th century.

Despite the dearth of intact deposit, we unearthed information about different use episodes, some more intensive than others. These included use by the people of Bokoni, probably as a refuge during the *mfecane*, as well as use during conflict stemming from internal processes in Eswatini during the mid-19th century. These pulses of use suggest that people in northeastern South Africa viewed cave systems in a manner similar to the occupants and users of other South African caves; as places of ritual and refuge, but not quotidian use.

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