Crystals for What?

Reflections on a Middle Stone Age Find at Hollow Rock Shelter, Western Cape Province, South Africa

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Abstract

The excavation of the Hollow Rock Shelter site, Western Cape Province, South Africa, exposed an occupation layer dated to about 80,000 years. The main tool was bifacial shaped points of the Still Bay type. Almost fifty small rock crystals were found within a small concentration. There is no clear use wear to suggest any practical function.

Finds of ochre pieces, some with deliberate carving, advanced knapping technique, and shells with perforation indicate that modern thinking with some capacity for abstraction began to evolve during the Still Bay phase. Several late prehistoric and ethnographic examples round the world exhibit the use of rock crystals in connection with symbolic behaviour.

It cannot be ruled out that crystals were used as decoration, just as ochre may have had an aesthetic/symbolic meaning similar to body painting.

Introduction

The northern part of Cederberg mountains, in the northern part of Western Cape Province, Republic of South Africa, includes a number of ridges with peaks up to about 1000 m and some fertile valleys in between. To the west the Olifants River marks the edge of the mountains, and to the east an area with eroded hills marks the start of the large Karoo Plain. The area in the northernmost part of the Cederberg is delimited to the east by a small valley with the Brandewynriever river (Fig. 1).

A bedrock platform some 70 m above the surroundings, with a steep ridge towards the valley, is located in the direction of the Sevilla farm which also includes the popular Traveller's Rest. Resting close to the edge of the platform are some large boulders originating from an almost totally eroded peak.

The shelter is well located to facilitate hunting and gathering, and the settlers were nevertheless well protected. From the shelter, a long stretch of the valley with the small river could be kept under surveillance. A vast area east of the bedrock platform could also be surveyed. A large cliff nearby gave a broad view towards the Cederberg to the south and

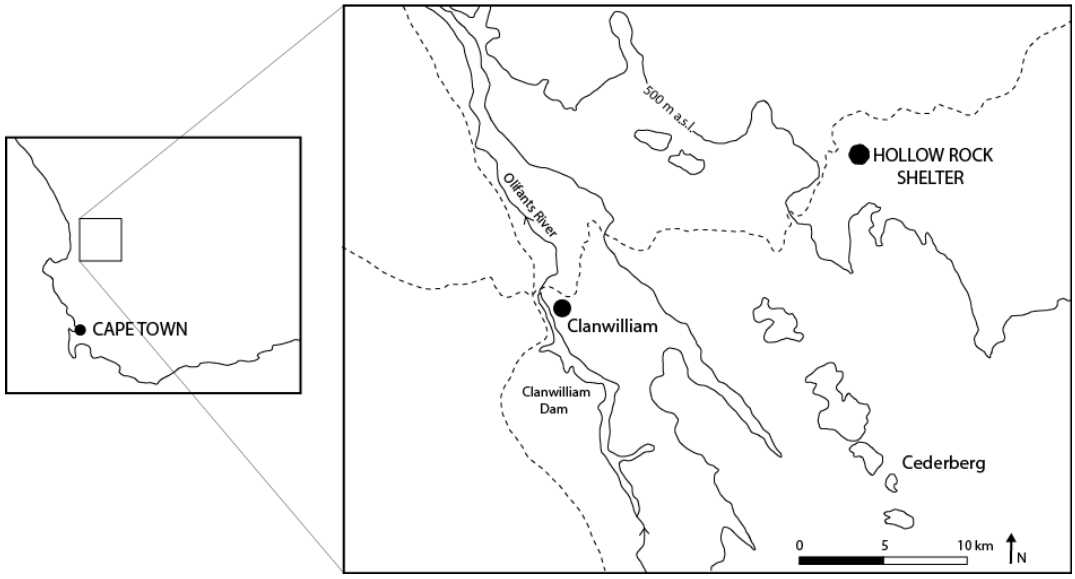

Fig. 1. The location of Hollow Rock Shelter in southern Africa.

Fig. 2. A view of the river valley from the Hollow Rock Shelter site. Photo Lars Larsson

Fig. 3. The cliff underneath which the site is located. Photo Lars Larsson

the west (Fig. 2).

One of these boulders is shaped like a small pyramid with a height of 6 m (Fig. 3). When still a part of the rock, one side developed a concave shape due to slow erosion. The concave side happened to form the base when a large piece fell off and down on to the bedrock platform. This caused a hollow area of some 30 square metres with a maximum height of 2 m in the centre while most of the hollowed area is lower (Fig. 4). Right beside the highest summit there is a hole straight through the large boulder. The edge of the base has some concave depressions forming openings to the concavity (Fig. 3). The largest opening is oriented towards the edge of the platform. A boulder immediately adjacent gave protection and also prevented a direct view towards the valley below the platform.

The Hollow Rock Shelter site (HRS) was recognized in 1991 during a survey for rock paintings.

The site has a very special structure compared with other sites in South Africa. It has some similarities to a shelter site, as it is protected. In contrast to most caves and shelters where excavations cover smaller parts of the settlement with a thick stratigraphy, because of the small size and thin layer a large proportion of the occupation layer in HRS has been excavated.

An excavation in 1993 revealed an occupation layer, extending for about two-thirds of the floor (Evans 1993; 1994) (Fig. 5). The occupation layer had a maximum thickness of 35 cm. The excavation was performed in spits of 5 cm. No stratigraphic divisions could be observed within the thin filling at the 1993 excavation (Evans 1994).

Excavation of Hollow Rock Shelter

In 2008 a second small excavation was carried out (Larsson 2009; Larsson 2010; Högberg & Larsson 2011). The aim of this investigation was to plot the artefacts accurately within a central section with the thickest occupation layer in order to ascertain whether it was possible to distinguish settlement horizons. Another aim was to take samples for optical thermoluminiscence (OTL) as a way to determine the age of the settlement site.

The hole in the rock close to the maximum height of the concavity worked as an excellent exit for the smoke from a fire (Fig. 4). Just below this hole, a structure of stone interpreted as a fireplace was documented. The thickest occupation layer was found in the same area. The only organic components, small pieces of charcoal, were found in the same area as the assumed fireplace (Fig. 5). The charcoal consists exclusively of two major Cederberg Fynbos tree species: *Widdringtonia cedarbergensis* and *Protea nitida* (Cartwright 2013). Radiocarbon dating of charcoal gave

Fig. 4. View from the inside of the shelter with the hollow in the roof. Photo Lars Larsson

an infinite age (> 48,000 BP LuS 8979), which was expected if the fireplace was the same age as other material. The fireplace was a focal point in the settlement, as evidenced by the fact that the greatest amount of tools and refuse was found in the excavated squares around the fireplace.

In 2008, the excavated finds were recorded in three dimensions. The predominant parts of the artefacts were found in the upper layers. Even though the habitation layer is thin, the thickness varies within the excavated area but rarely exceeds 30 cm.

The most common material is quartzite (53–75%), while quartz (10–14%), silcrete (4–19%) and hornfels (5–8%) make up the remaining raw materials. There seems to be some kind of a settlement sequence as the frequencies of the raw material used on the site vary from one artificial layer to another (Evans 1994).

Different qualities of quartzite were used, some very fine-grained material and others very rough. Quartz and quartzite are found close to the site. Hornfels is present about 40 km to the west. The origin of the silcrete has not been fully investigated (Evans 1994).

The excavations in 2008 collected samples for optically stimulated luminescence dating (OSL). The results for the main levels with finds are approximately 72,000 and 80,000

BP (Högberg & Larsson 2011). What can be observed is that the preliminary dates for HRS are in line with or somewhat older than the ages of the Still Bay phase proposed by Jacobs *et al.* (2012) and younger than the ages presented from the investigation of Diepkloof Rock Shelter (Tribolo *et al.* 2013).

Except for one backed piece typical of the Howiesons Poort phase found outside the shelter, no other artefact has been found to prove that the shelter was used during periods later than the Still Bay phase (Evens 1994; Minichillo 2005; Högberg & Larsson 2011), although plenty of rock art paintings in the vicinity indicate that the area was used during parts of the Later Stone Age (Parkington 2003).

The Still Bay phase is characterized by bifacial shaped points. Around seventy of these were found in HRS. The registered items include broken, complete, discarded or used, blanks, and preforms and points in different phases of production (Högberg & Larsson 2011; Högberg 2014). As with the refuse from the manufacture of points, the majority of the points were found in the central part of the find site, right beside the fireplace (Högberg 2014).

As for the vertical distribution, all the points were found in the uppermost 20 cm of the stratigraphy. In the lower layers, which can measure 10 to 15 cm, there are no points but there is a small amount of refuse deriving from the manufacture of bifacial forms, probably points of Still Bay type which seemingly were not left at the site in the same way as in the upper layers (Högberg 2014). The cave may possibly have had a function that differed from the later use.

Apart from points, a considerable amount of blades was found (Högberg 2016) as well as a small number of tools such as scrapers, knives and drills.

Refitting of the flakes indicates that there is no great vertical distribution (Hammarstrand Dehman 2010). Parts of one and the same artefact come from the same five-centimetre spit or from the adjacent spit.

The find of the crystals

The finds included a number of rock crystals. An interesting observation about these is the distribution of the finds. Of the 48 crystals that were found, 45 were within the same square metre and 34 within a layer comprising at most 10 cm. All the other crystals come from adjacent square-metre squares (Fig. 5). This distinct concentration in a limited space in the northern part of the fireplace area differs from the distribution of other points, for example, those of Still Bay type. Although a significant number of points were found within the fireplace area, they have a larger spread. The distribution area of the crystals indicates that the majority were deposited in accumulated form. In addition, the majority of the crystals were found in layers under the vertical distribution of the Still Bay points.

Since none of the excavations found any evidence of changes in the occupation layer, it cannot be demonstrated whether the crystals were deposited at a lower settlement horizon or were placed in a shallow pit.

The hexagonal crystals are, with one exception, of extremely limited format. They vary in length between 0.5 and 2 cm and in width between 0.3 and 0.7 cm (Fig. 6). The majority are fragments that show fracture marks at both ends. A clear difference between the transparency of the crystals can also be discerned. A small number are totally transparent but the majority are only partly or not at all transparent. This is due in part to a certain colouring that has affected the crystal. It is obvious from the analyses of the occupation layer that there was iron precipitation. This could have affected the surface of the crystals. Besides this, some of the crystals display uneven surfaces that

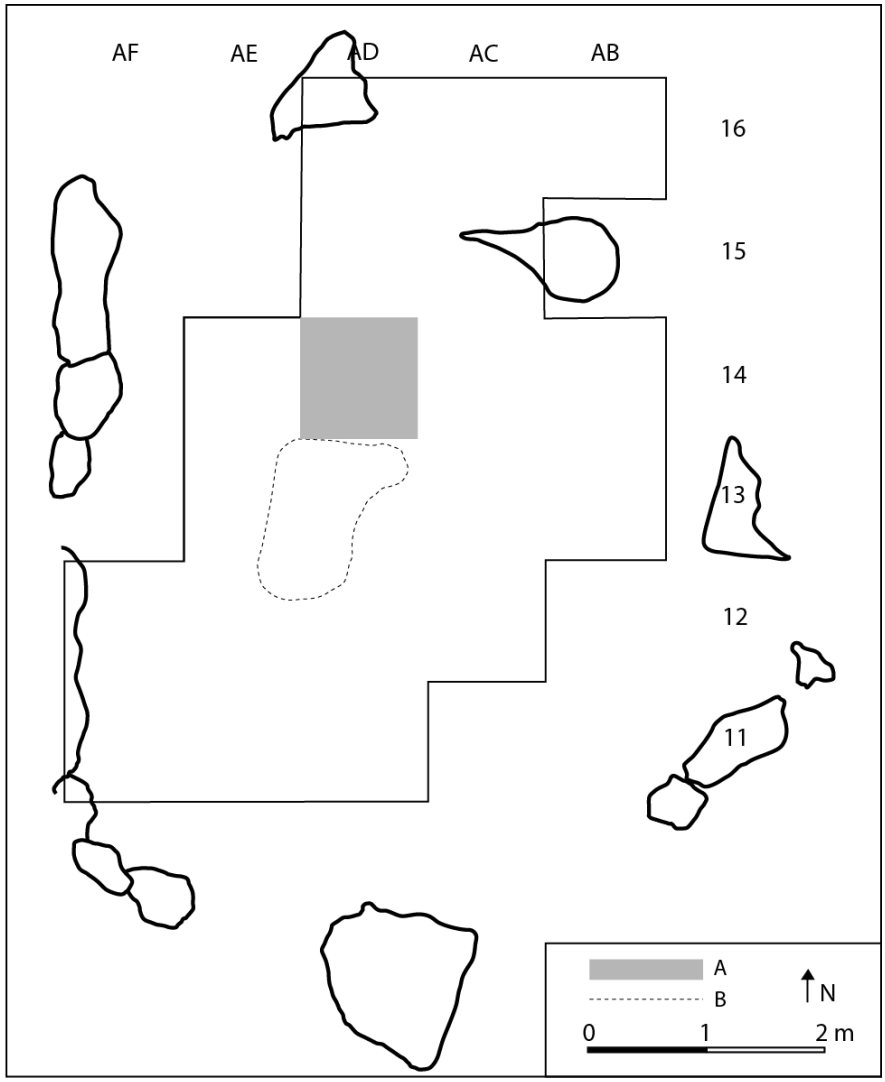

Fig. 5. Plan of the settlement with the distribution of crystals (A) and the location of the fireplace (B).

reduce the transparency. Some also have an uneven surface with small depressions. Only one crystal differs in size from the others, with a length of 4.5 cm and a width of 1.2 cm.

The crystals were thus found within a very limited area and the majority within a limited level at the bottom of the stratigraphy. It is perfectly clear that they were brought to the find spot. They probably occur within the same area as the rest of the quartz material, embedded in the sandstone in the mineral called Table Mountain Sandstone which makes up a significant share of Cederberg in the surroundings of the find spot (Truswell 1977). Rock crystal, which is monocrystalline, is found in the same bedrock as quartz as a usually colourless variant of that mineral (Fernández-Marchena & Ollé 2015). Since quartz was one of the most important raw materials for the people at Hollow Rock Shelter, rock crystal must have been available in the bedrock close to the find spot.

Fig. 6. A number of the rock crystals. The white bar is 1 cm. Photo: Anders Högberg.

The practical function of the crystals

Could there have been any practical function for these crystals? One probable function was as raw material for processing, despite the limited size. Rock crystal was a common raw material for working into various tools in the latter part of Middle Stone Age. As raw material it is highly unusual in the Still Bay phase but it occurs more often in the Howiesons Poort phase which is about 20,000 years later (Delagnes *et al.* 2006; Wadley 2008; Wadley & Mohapi 2008; Lombard 2011; Porraz *et al.* 2013; de la Pena & Wadley 2014). During the Later Stone Age rock crystal is found at several sites (Orton *et al.* 2011). In these examples the crystals are bigger than those discussed here, corresponding to the size of other materials at the find spot from which tools of ordinary size could be produced. It is of particular significance that the inhabitants of Hollow Rock Shelter did not use rock crystal as raw material for tool manufacture.

A small number of the crystals have points showing more or less splintering, which could have been caused by some form of use. Without deliberate change the crystals could have been used for perforating, for example, hides or some harder material. The crystals have therefore been examined under powerful magnification. There is no clear use wear to suggest any such function (personal communication from Professor Marlize Lombard, Department of Anthropology and Development Studies, University of Johannesburg).

Another function for the crystals

As regards physical characteristics, representatives of modern *Homo sapiens* appeared roughly 300,000 years ago (Hubin *et al*. 2017; Schlebush *et al*. 2017). However, it is only later that we have the first evidence of the mental ability associated with modern man. During a phase corresponding to the appearance of Still Bay points we see the first real traces of more advanced cognitive behaviour. This is visible in probably the first abstract expressions in the form of carvings. In Blombos Cave on the south coast of South Africa there were pieces of red ochre with incisions (Henshilwood *et al.* 2009). Some of these are simple strokes, but a couple have lines juxtaposed with diagonal strokes.

In HRS a considerable number of ochre pieces were found showing distinct traces of having been used as crayons or with surfaces that have been rubbed off (Larsson 2009). However, it has not been possible to discern any clear traces of deliberate carving. On the other hand, a couple of smaller ochre pieces have been notched along the edge (Fig. 7). The pieces are so small and so soft that they could hardly have had any obvious practical function corresponding to, say, blades and flakes with denticulation.

Red ochre has been shown to be suitable as an adhesive for attaching stone tools to shafts (Lombard 2007; Wadley *et al.* 2004), besides which it had a protective effect on human skin (Rifkin *et al.* 2015). This colour variation on the pieces of ochre, however, from bright red to almost yellow, suggests that ochre may have had a special meaning apart from its practical uses.

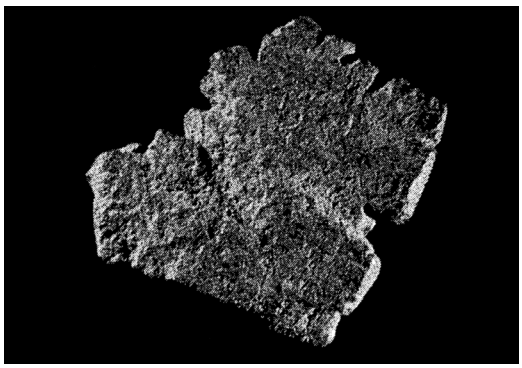

Fig. 7. A small piece of red ochre with notches. From Evans 1994.

Also found at Blombos were shells with perforation. Use wear on the edge of the perforations shows that they were used as beads (d'Errico *et al.* 2005). Two large shells from Blombos Cave were found in a layer around 100,000 years old (Henshilwood *et al.* 2011). In these shells there was not only red ochre but also several stone objects, suggesting that they were deliberately deposited together.

The Still Bay points show an advanced manufacturing technology, as evidence of the oldest traces of pressure flaking and demonstrating that different methods were used to produce points at the same settlement site (Högberg & Larsson 2011; Högberg 2016; Högberg & Lombard 2016; Mourre *et al.* 2017). It was also during this period that the oldest known bone tools were made (d'Errico & Henshilwood 2007), and carvings on bone have been identified (d'Errico *et al.* 2001). These finds together have convinced researchers that it is during this phase that the first real traces of more advanced cognitive behaviour are attested (Henshilwood & Marean 2003; Henshilwood 2007; Henshilwood & Dubreuil 2009). Modern thinking with some capacity for abstraction began to evolve.

Crystals in archaeology and anthropology

In the discussion as to whether there are non-utilitarian finds in the Early and Middle Palaeolithic, reference is made to finds with accumulations of rock crystals (Bednarik 1992). Twenty crystals are said to have been

found in Zhoukoudien, China, inhabited by *Homo erectus* (Pei 1931). Another assemblage of six crystals, 7–25 mm in size, comes from Singi Talav, India, from the Lower Acheulian (d'Errico *et al.* 1989). It is also recorded that several crystals were found at Gesher Benot Ya'aqov, Israel, likewise dated to the Acheulian (Goren-Inbar *et al.* 1991). These are much older finds than the ones under consideration here.

Among southern Africa's settlers during the Later Stone Age, a significant find of rock crystal is known. It came from a roughly five-thousand-year-old grave at Oakhurst Shelter on the southern coast of South Africa, with a child in which a rock crystal was inserted in an eye socket (Goodwin 1938).

Further examples of crystal finds occur later in prehistory with a couple of examples from other parts of the world. Rock crystals are known from Early Mesolithic find places in mountain areas of southern Norway. They have been interpreted as having supernatural significance for the settlers (Bang-Andersen 1998). Outside a megalithic tomb in Val de Rodrigo, southern Portugal, unworked rock crystals were found together with other objects as grave goods for young persons (Larsson 1998).

Among the San people of southern Africa, owners of rock crystals were believed to be able to influence rain and hail (Hampson 2013 with many references to the symbolic meaning of rock crystals in global anthropological contexts).

An important aspect of why rock crystals became so important is that crystal, rubbed against quartzite, creates an intensive, white-blue glow resembling lightning and exhibits iridescence when held against sunlight. The sparkling magic and fascination of rock crystal can hardly be overestimated.

Crystals have been used in many ways and most in connection with symbolic behaviour. In several ethnographic contexts scholars would see a link with shamanistic activity. Among the Yumans and Chumash in southern California, crystals were used as points in bone wands by shamans, and also in rituals connected with healing and initiation. Crystals were also deposited in graves (Levi 1978; Koerper *et al.* 2002).

In the Amazon, Desana ritual specialists refer to quartz crystals as vehicles that enable communication with both humans and non-humans, and with both living and non-living things (Reichel-Dolmatoff 1997). Among the Huichol in Mexico rock crystals are called *te'vali* "produced by the shamans" and thought to be "dead or even living people" (Lumholtz 1900).

A cache of unusual objects was found a Later Stone Age context at Jubilee Shelter in the Magaliesberg, southern Transvaal, and they have been interpreted as a shaman's paraphernalia (Wadley 1987; 1997). There were, for example, quartz crystals, rubbed stones and a Middle Stone Age point.

Discussion

There is no doubt that rock crystals had an important symbolic function in late prehistoric times. The special meaning of crystals even earlier than this is indicated by the finds in Hollow Rock Shelter, which were found in a distinct assemblage in a context showing that they were not used as raw material for tool manufacture. It has not been possible to identify any traces of wear reflecting a functional use.

To suggest both a practical function for rock crystals as raw material and an aesthetic or symbolic use may seem excessively complex. But this can be compared with the red ochre which may have been used as an adhesive and to protect against light, but which was also the material on which the first certain carvings appear.

During the same phase to which the settlement in HRS is dated we also find the oldest traces of body decoration in the form

of perforated shells. It thus cannot be ruled out that crystals were used in a similar way as dress decoration, just as ochre may have had a similar aesthetic/symbolic meaning as body painting.

The fact that a considerable number of Still Bay points have been found in HRS can possibly be related to the mental capacity of the inhabitants. A stage of cognitive evolution which is linked to behavioural modernity is described as going from episodic to mimetic culture, from mimetic to mythic culture and from mythic culture to external symbolic storage (Donald 1991; Wurz 2008). These objects in different stages of finishing were left behind in a stock of memories of the landscape in which the people had moved (Högberg & Larsson 2011). The same may apply to the crystals which were more subtly perceived as a part of the landscape that could be related to a cosmic sphere through their unusual form as well as their remarkable property of causing optical phenomena when handled.

That the population may have grown in favourable climatological conditions during the period coinciding with Isotope Stage 5 might have been one reason for a rapid cultural evolution including symbolic behaviour (Shennan 2001; Powell *et al*. 2009) and its diffusion.

Another perspective which can also be brought into this discussion is the evidence of stones or fossils that attracted people's attention through their special form or colour but were not subjected to any artificial change. There is rarely any doubt that they were brought to the find spot, but the function they had subsequently is rarely considered. Such objects deserve more attention.

Acknowledgements

I would like to thank Stellenbosch Institute for Advanced Study (STIAS), Wallenberg Research Centre at Stellenbosch University for the generous research environment they have provided for this research.

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