

# Skeletal finds at Cobra Hood Cave, Sigiriya – A preliminary study

M. S. Chandrasekera<sup>1</sup> and E. R. Wikramanayake<sup>2</sup>

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## Summary

Excavations at the Sigiriya 'Cobra Hood Cave' (rock shelter B9) unearthed what appears to be a Middle Historic Period burial site. The excavations yielded skeletal remains of nine individuals. This study suggests that at the time of death these individuals were young healthy adult males of 152 cm or more in height. Burial practice has been in an extended position in a west-east orientation with hands clasped in front and the face turned towards the south. No burial offerings or other ritual objects were found.

**Key words:** Burial site, 6th or 7th century AD, skeletal remains.

## Introduction

In late February 1991, Professor Senake Bandaranayake, Archaeological Director, Cultural Triangle, Sigiriya Project sought assistance from the Department of Anatomy, Faculty of Medicine, University of Peradeniya for the identification of skeletal remains that had been exposed at "Cobra Hood Cave" (rock shelter B9) in the Boulder Garden Complex at the foot of the Sigiriya rock. Six visits were made by the authors to the site. During these visits assistance was given for further excavation and identification of the human skeletal remains that were exposed. This paper is based on the work done by the authors on these skeletal finds.

## Methodology

### Excavation

When the first visit was made, skeletal remains of two individuals had been partially excavated (Pit no. 7 skeleton 39 and 40). These remains were not disturbed, as material for radiocarbon dating had still not been taken. The end of a long bone (left humerus) had also surfaced in the adjoining pit (Pit no. 7 skeleton 41).

The major part of the study was carried out on pit no. 7 (Fig. 1). The upper part of this skeleton could not be exposed as it was situated under the boundary wall of the pit (Fig. 1). Anticipating the location of other skeletal remains the adjacent area was systematically excavated. When a bone surfaced, further excavations and exposure were taken over by the authors.

The head of skeleton 42 was unearthed, cleaned and photographed (plate 1). This skull was more complete than that of skeleton 40. On the second visit skeletons 43 and 44 were also exposed and photographed (plates 2 and 3).

During the third visit skeletons 45 and 47 were exposed. Skeleton 47 was exposed from the lower limb upwards. The head was left unexcavated as more material had to be taken for radiocarbon dating. Skeleton 45 was photographed (plate 4). On the fourth visit some long bones in the south boundary of the pit (skeleton 46) parallel to skeleton 44 were excavated.

### Identification, Assessment and Anthropometry

On the fifth and sixth visits in situ illustrations of skeletons 39, 40, 41, 42, 43, 44 and 45 were made. Identification of bones giving sides, charting of bones and teeth, morphometry of the skull, shafts of long bones and teeth, were done with minimal displacement. Approximate lengths of the skeletons from vertex to end of tibia were measured with a steel tape. The degree of attrition of teeth and the presence of bone and teeth pathology in the exposed parts of the skeletons were assessed. Plate 5 shows the study in progress. The layout of the skeletons are given in plate 6 and the composite drawings of the skeletons are given in figure 1.



## Results

The skulls of all the skeletons (skeleton 40, 42, 43, 44 and 45) were lying with the facial skeleton facing south. The head ends of the skeletons 42, 43 and 44 were directed towards the west and therefore in these skeletons only the left side of the skulls and the facial skeletons were exposed. In contrast the head end of skeleton 45 was directed east and the right side of the skull and the facial skeleton of this was exposed (figure 1). Further investigation was not possible as storm water inundated the pit soon after the sixth visit.

A detailed description of each of the skeletal finds is given below.

**Skeleton 39** – Excavated at S<sub>3</sub> W<sub>7</sub> 4/7 on the surface of soil layer context 35. Fragments of ribs, left humerus, left and right femurs and left and right tibiae were found. The long bones were lying in a plane parallel to the long axis of the body (extended position).

**Skeleton 40** – Excavated at S<sub>3</sub> W<sub>7</sub> 7/1 and consists of a skull lying on its right side with maxillary left I1, I2, C, PM1, PM2, M1, M2, M3 and mandibular left I1, I2, C, PM1, PM2, M1, M2, M3 teeth exposed. The brow ridges and frontal eminences were prominent.

**Skeleton 41** – Excavated at S<sub>3</sub> W<sub>7</sub> 7/7 on the surface of the soil layer context 30c. This consists of the shafts of the left humerus and radius, left and right femurs and left tibia in the extended position.

**Skeleton 42** – Excavated at S<sub>3</sub> W<sub>7</sub> 7/7, 7/8 and S<sub>4</sub> W<sub>7</sub> 1/1 on the surface of the soil layer context 30c. This was lying on its back in the extended position. The skull was lying on its right side with maxillary left I1, I2, C, PM1, PM2, M1, M2, M3 and mandibular left I1, I2, C, PM1, PM2, M1, M2, M3 teeth exposed. The brow ridges and the frontal eminences were prominent. The rest of the skeleton consists of fragments of the left clavicle, shafts of left and right humeri, left and right femurs, left and right tibiae, left and right fibulae and left metatarsals.

**Skeleton 43** – Excavated at S<sub>4</sub> W<sub>7</sub> 1/1 and S<sub>4</sub> W<sub>7</sub> 1/2 on the surface of the soil layer context 30c. This was lying on its back in the extended position with the hands clasped in front of the body. The skull was lying on its right side with maxillary left I1, I2, C, PM1, PM2, M1, M2, M3 and mandibular left I1, I2, C, PM1, PM2, M1, M2, M3 teeth exposed. The brow ridges and the frontal eminences were prominent. The rest of the skeleton consists of fragments of the left clavicle, shaft of right humerus, left and right radii, left and right ulnae, metacarpals of the left side, left and right femurs, left and right tibiae and left and right fibulae.

**Skeleton 44** – Excavated at S<sub>4</sub> W<sub>7</sub> 1/1 on the surface of the soil layer context 30c. This was lying on its back in the extended position. The skull was lying on its right side with maxillary left I1, I2, C, PM1, PM2, M1, M2, M3 and mandibular left I1, I2, C, PM1, PM2, M1, M2, M3 teeth exposed. The brow ridges and the frontal eminences were prominent. The rest of the skeleton consists of fragments of the left and right clavicles, cervical vertebrae, ribs on the left side, the sternum, shafts of left and right humeri, right radius, right ulna, metacarpals of the left side, pelvic bones, shafts of left and right femurs and right tibiae.

**Skeleton 45** – Excavated at S<sub>4</sub> W<sub>7</sub> 1/2 on the surface of the soil layer context 30c. This was lying in the extended position with the long bones of the right side on top of those of the left. The skull was lying on its left side with maxillary right M1, M2, M3 and mandibular right I1, I2, C, PM1, PM2, M1, M2, M3 teeth exposed. The brow ridges and the frontal eminences were prominent. The rest of the skeleton consists of fragments of the left humerus, right radius, right ulna, left and right femurs, left and right tibiae, left and right fibulae and metatarsals of the left side.

**Skeleton 46** – Excavated at S<sub>4</sub> W<sub>7</sub> 1/1 and consists of fragments of the shafts of long bones in the extended position.

**Skeleton 47** – Excavated at S<sub>4</sub> W<sub>7</sub> 1/3 on the surface of the soil layer context 30c. This



consisted of skull and bones of the upper limb (removed for radiocarbon dating) leaving fragments of the shafts of right tibia and fibula in the extended position.

### Discussion

Bandaranayake commenting on the initial finds has remarked that "most of these skeletons seem to have been buried in shallow 'graves' in the usual extended position, with the head to the west and, in several examples, face turned to a side. The stratigraphy shows that the 'burials' belong to a phase after the collapse of the buildings of the Kasyapan period (477 - 495 AD). We may thus date them, very tentatively, to the 6th or 7th century" (personal communication). The findings of the present study of burials in pit no. 7 confirms that all the burials are in the extended position.

In contemporary Sri Lanka, in preparation for burial the extended body is laid on its back in a west-east orientation with the hands clasped in front and the face frontal. No burial offerings are made. Extended burials have a tradition dating back to the Mesolithic Period in Peninsular India and Sri Lanka (1). Extended burials were also continued in the subsequent Proto Historic Megalithic tombs of the Early Iron Age in Sri Lanka. The burial offerings often constituted the interment of shell, animal bones, food grains (such as paddy), semi-precious stones and metal implements (1). The extended burial at Mantai was located below the Arretine Ware level. It had a west-east orientation, knees slightly drawn up while the hands lay folded across the lower chest (1, 2). Similar features are reported from the megalithic burial at Anaikodai in the Jaffna peninsula, which belongs to the Early Historic Period. "The burial was an extended inhumation oriented west to east and the skeleton was 5' in height. The hands were found folded in front" (3). The orientation of the face has not been commented on, although plate 9 in this publication (3) clearly shows that even in megalithic times the head has been turned so that the face was oriented southwards at burial. This practice was also continued during the Historic Period. The 1985 excavations at the west side of the Alahana Parivena at

Polonnaruwa yielded a skeleton lying on its right side, in an extended position with its face oriented southwards (S. Seneviratne, personal communication).

The most striking feature of the extended burials in the present study is that the faces are turned to the south instead of being frontal. In humans, death usually occurs in the supine position. In this position the facial skeleton is frontal and the limbs lie parallel to the trunk. Till rigor mortis sets in, it is possible to rotate the head relative to the trunk. In the present study skeleton 40, 42, 43 and 44 are in the west-east orientation, whereas skeleton 45 is in the east-west orientation. However, all the faces were oriented southwards instead of being in the frontal position usual at death. If this was a burial practice, the facial skeleton of skeleton 41 when exposed should also face south. Skeleton 42, 43 and 44 have the facial skeleton facing south and the lower limbs parallel to the trunk. Therefore in these bodies the heads would have been rotated during preparation for burial to make the facial skeleton face south before rigor mortis set in. In the case of skeleton 45 the facial skeleton faces south but the long bones of the right side lie on top of those of the left. It is postulated that in this case the rotation of the head prior to burial had not been possible due to the onset of rigor mortis. The body has therefore been placed on its left side to make the facial skeleton face south. Another noteworthy feature is that there was no evidence of burial offerings at this burial site.

The megalithic burial sites of Sri Lanka date from the eighth century BC (S. Seneviratne, personal communication). The present burial has been dated as 6th or 7th century AD. Burial practice of the west-east or east-west orientation of the extended body, with the rotation of the head from frontal to facing south, appears to have continued from the megalithic times (3) to the time of the burials exposed in the present study. Burial offerings also have continued for individual graves up to the time of the present study. No mass burial sites have been reported so far in Sri Lanka. The absence of burial offerings in the present study may be due to the



fact that it is a mass burial site. The change in the extended burial practice to orientation limited to the west-east direction only and the undisturbed frontal position of the face in more recent times could be confirmed with studies from 7th century AD to the present.

Since the proximal and distal ends of all long bones found were missing it was not possible to calculate the stature of the individuals using standard formulae available. The measurement from the vertex to the lower end of tibia is an assessment of measurement of stature for comparison between skeletons. Skeleton 42, 43 and 45 have a length of approximately 163 cm (5' 3") and skeleton 44 has a length of 153 cm (5'). Although no absolute measurements can be given, these individuals were 153 cm (5') or more in height. As no pelvic bones were excavated in any of the skeletons the gender of the individuals cannot be given with certainty. From the evidence of prominent brow ridges and the frontal eminences of all the skulls the skeletons are more likely to be those of males.

The completion of the permanent dentition is around 18 to 25 years of age. As an individual ages the attrition of the teeth gradually increases, giving an indication of aging. All the skulls of the present study showed the full permanent dentition with minimal attrition. The sutures of the skull fuse only at middle age. The sutures of the skulls of the present study were clearly visible. From the evidence of the teeth and skulls and the fact that dental caries or bone pathology was absent, these individuals could be assumed to have been young healthy adults. Combining all the findings on the nine individuals in this study, pit no. 7 seems to be a burial site where a group of young adult healthy males of 153 cm (5') or more in height have been buried at the same time. The parallel rows partially excavated in this study indicates an extensive burial site with burials extending further in all directions. Since a community consists of individuals of all ages and equal numbers of males and females it is highly

unlikely that even nine young healthy adult males would have died at the same time due to natural causes, in an epidemic or in a natural disaster. If later excavations expose more skeletons of normal healthy adult males the possibility of such an event is even more remote. Therefore it is postulated that the site under study is a mass burial for warriors. However, no injuries were detected in the skeletal remains that would indicate the cause of death. The burial practice has been in an extended position in a west-east orientation with hands clasped in front and the face oriented southwards with no burial offerings.

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# SIGIRIYA SKELETONS COBRA HOOD CAVE TERRACE

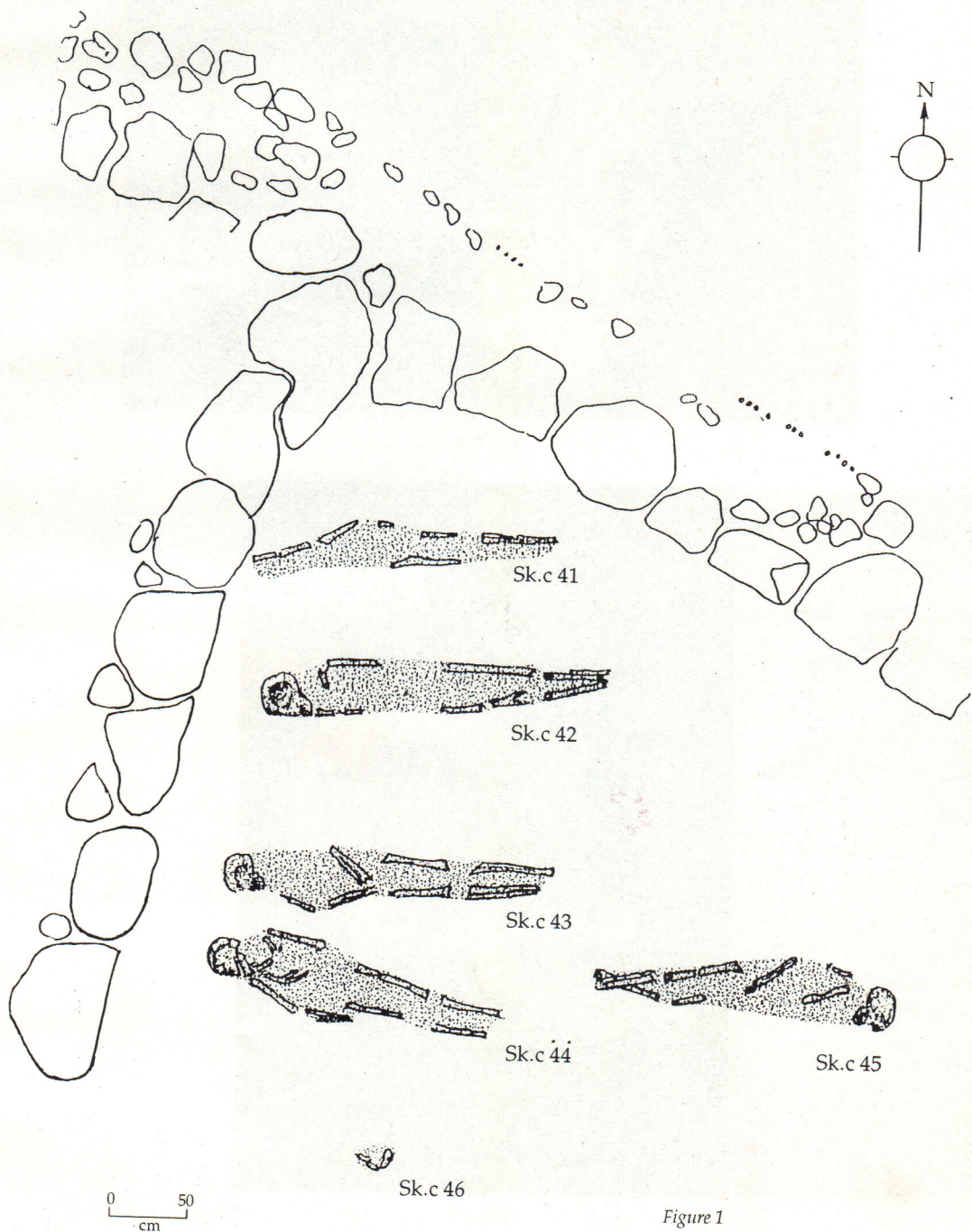


Figure 1



*Plate 1**Plate 2*





*Plate 3*



*Plate 4*



*Plate 5**Plate 6*