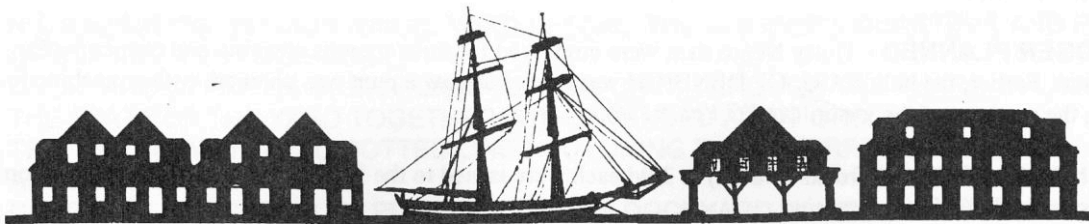


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Recent Archaeological and Anthropological Evidence from Belle Air Cave, Jamaica

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Abstract: Belle Air cave, in the vicinity of Runaway Bay, was located in 1986 by Bishop Geoffrey Johnson and his brother Grasford Johnson. The discovery was reported to Dr James Lee, who identified it as a Pre-Columbian burial site (AC4 in his notation). Four complete bowls were recovered from the cave, together with other potsherds, and some human skull and jaw fragments. From the analysis of the material now kept at the University of the West Indies, it seems that a minimum number of six individuals was present. In January 2004 the site was revisited by UWI staff and students, and a further human skull and mandible were recovered. The skull probably represents a young to middle aged female, with some pathological features. It is not certain whether the mandible belongs to the same individual. In June 2004 the cave was surveyed and mapped in plan and cross-section by members of the Jamaican Caves Organization.

Résumé: La grotte de Belle Air, se situant aux alentours de Runaway Bay, a été découverte en 1986 par l'Evêque Geoffrey Johnson et son frère Grasford Johnson. Cette découverte a été signalée au Dr James Lee, qui l'a identifiée à un site funéraire Précolombien (AC4 dans sa notation). Quatre bols complets ont été récupérés de la grotte, ainsi que d'autres tessons, quelques crânes humains et des fragments de mâchoire. Après analyse des découvertes maintenant conservées à l'Université des Antilles, il semblerait qu'il s'y trouvait au minimum six personnes. En janvier 2004 le site a été revisité par des enseignants et étudiants de l'Université des Antilles, et un autre crâne humain et mandibule ont été découverts. Le crâne appartiendrait peut-être à une jeune femme d'âge moyen, ayant quelques traits pathologiques. Mais il n'est pas certain que la mandibule et le crâne appartiennent à la même personne. En juin 2004 la grotte a été examinée par les membres de la Jamaican Caves Organization, et une carte ainsi qu'une vue en coupe ont été dressées.

Resumen: La cueva de Belle Air se sitúa en la proximidad de Runaway Bay. Fue descubierta en 1986 por el obispo Geoffrey Johnson y su hermano Grasford Johnson. Su descubrimiento fue comunicado al Dr. James Lee, quien lo identificó como un espacio de enterramiento precolombino (AC4 en sus anotaciones). En la cueva se recuperaron junto con cuatro vasos completos, fragmentos tanto de cerámica como de cráneos y mandíbulas humanas. El análisis del material, almacenado en la Universidad de West Indies, determinó la existencia de un número mínimo de seis individuos. En enero del 2004, el lugar fue revisado por un equipo de la UWI, el cual recuperó un cráneo y una mandíbula humana. El cráneo probablemente pertenece a una mujer joven mediana edad, presenta una serie de evidencias patológicas. No existe la certeza de que la mandíbula pertenezca al mismo individuo. En junio del 2004 la cueva fue medida por los miembros de la Jamaican Caves Organization, quienes realizaron un plano y la sección transversal de la misma.

Introduction

The cave of Belle Air, in the vicinity of Runaway Bay, on the north coast of Jamaica, was located in 1986 by Bishop Geoffrey Johnson and his brother Grasford Johnson, who were in charge of ground clearing for the Pentecostal Ark Old People's Home. The discovery was reported to Dr James Lee, who identified it as a Pre-Columbian burial site (AC4 in his notation). He provided a brief note about the cave, in one of his last publications concerning the prehistory of Jamaica (Lee, 1992). Dr Lee's collection of material from various sites in the island, including Belle Air, was handed over to the University of the West Indies (UWI) in the year 2000, and a complete record of it has been made (ed. Allsworth-Jones and Rodriques, 2008).

The human and animal bones from the site, respectively, have been studied by one of the authors, Dr A. L. Santos (2008), and by Dr Lisabeth Carlson (2008). In January 2004 the site was revisited by staff and students from the University of the West Indies, and a further human skull and mandible were recovered from a crevice in the front part of the cave. In June of the same year the cave was surveyed by members of the Jamaican Caves Organization, and it has been mapped in plan and cross-section. This report provides a summary account of the material from the cave which is now kept at UWI in Kingston, and presents the results of the work carried out at the site in 2004. Belle Air therefore takes its place alongside the other well-known burial caves from the island, such as Halberstadt and Cambridge Hill, discovered from the 1890's onwards (Duerden, 1897; Harper, 1961-62; Allsworth-Jones, 2008).

The Lee Collection

Archaeological Material

The archaeological material stored at UWI is significant and quite abundant, considering the fact that it comes from a small site. There are four complete vessels, two of which contained numerous fragments of bones, teeth, shells, potsherds, lithics, and organic material in a powdery form (ed. Allsworth-Jones and Rodriques, 2008). This material was sifted and any recognisable items recovered. There is no other occurrence of this nature in the Lee Collection. It provides an indication that the cave when located was undisturbed, and it may also reflect the proximity of the site to Lee's house in Runaway Bay. Evidently he was able to remove the material exactly as he found it, without its suffering in any way in transit. The removal took place to safeguard the remains, which were clearly vulnerable once the site became known.

The first vessel contained 7 small sherds and about 36 stones, as well as some larger organic fragments. The second vessel contained 3 larger sherds, but no stones or larger organic fragments. Both vessels contained human remains, as well as fragments of animal bone and shells, which could not be identified. Some other material was also found, outside the four vessels, including 11 rim sherds and 52 body sherds, none of which was decorated. Although the material is not particularly characteristic, in general it can be classified as belonging to the White Marl (or Meillacan) style (Allsworth-Jones, 2008: 93-97).

Animal Bones

There were many fragments but most were unidentifiable beyond the class level. Only three species were definitely identified: *Alsophis sp.* (boa) *Geocapromys brownii* (hutia) and *Capra hircus* (domestic goat) (Carlson, 2008). There were at least two goats. The configuration of the cave is such that they could easily have fallen in at any time over the last 500 years, but their occurrence does highlight one observation made by Lee (1992), who stated that "in the largest bowl a small sheep skull had been set, suggesting that the cave was used for burials during the contact period with the Spaniards". This again is highly unusual,

and no other such occurrence has been recorded in Jamaica. There is no trace of this sheep skull now in the Collection.

Human Remains

A full report on these remains has been prepared by Santos (2008). MNI (minimum number of individuals) has been estimated according to Herrmann et al. (1990). Age at death, sex diagnosis, and indications of cranial modification have been evaluated following the recommendations of Buikstra and Ubelaker (1994). Despite the very fragmentary nature of the bones and teeth, it has been possible to recognise the presence of at least two individuals from one of the complete vessels mentioned above, and a further two were recognised in the material which was recovered from contexts outside these vessels. In addition, the Lee Collection contains one unmarked pot (which we labelled U1B68) filled with material very similar to that from the marked vessels. It is highly likely that this pot also comes from Belle Air cave, and its contents, which were also sifted, have been included in this inventory. The overall colour and grade of fragmentation of the bones and teeth is similar to those found elsewhere in the cave. Here too it was possible to recognise the presence of at least two individuals. The grand total of recognised individuals therefore is six, and the total number of identified specimens at this site came to 51. Many more fragments in the Lee Collection had to remain unidentified.

Of the six recognised individuals, four are considered adult and two juvenile. The adult from the first vessel is probably male, on the basis of a talus measuring 53 mm in length. The size of the talus is within the values determined by Wasterlain (2000) on a male sample. The juvenile remains in this vessel consist of a skull fragment and four teeth, and if all the teeth can be regarded as belonging together, it is probable that this was an infant less than three years of age. One of the adults from the cave context in general is most likely a male on account of the robustness of the mandible, and the ante mortem loss of almost all the teeth suggest that this was an elderly person. The age of the second individual, testified by a small portion of skull, cannot be precisely specified. There is again one adult and one juvenile from the unmarked pot. On the basis that the juvenile teeth all belonged together, the most likely age at death of this individual was about 5 years old.

The Site Revisited

In January 2004 the site was revisited by UWI staff and students, and a further human skull and mandible were recovered from a crevice in the front part of the cave. In June of the same year, the cave was surveyed by members of the Jamaican Caves Organization, and it has been mapped in plan and cross-section. The coordinates in terms of the World Geodetic System (WGS84) are 18°27' N and 77°20' W (the relationship between the WGS figures and the Jamaican grid coordinates is explained in Allsworth-Jones, 2008: 76-79). It is at an altitude of about 60 metres above sea level. As can be seen, the cave is not large (Figures 1 and 2). It is entered by a vertical shaft (or "pit") about one and a half metres deep which opens out into a sloping chamber about 9 metres long. A low side passage which can be entered with difficulty turns back towards the entrance.

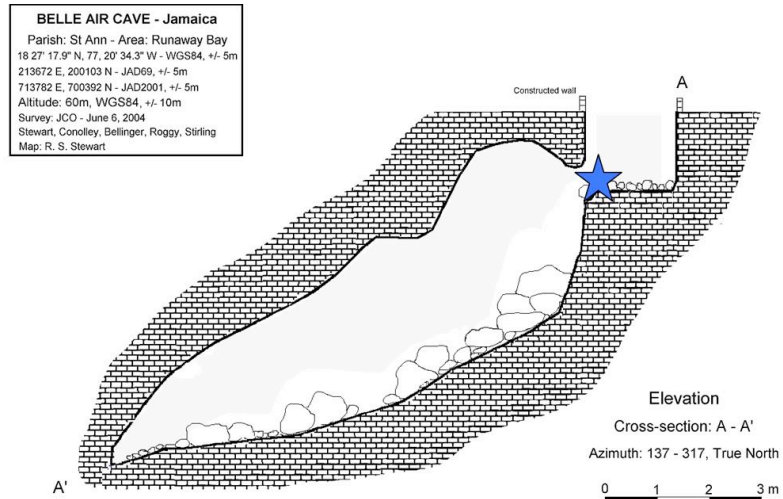


Figure 1. Belle Air cave cross-section. The position of the remains found in 2004 is indicated by a star.

The position of the skull and mandible found in 2004 is as indicated. The mandible was directly below the skull in a crevice, right at the entrance of the main chamber. The rest of the site is now devoid of remains, which were removed by Dr James Lee. The configuration of the cave suggests that it was never used for occupation, but only for burial purposes.

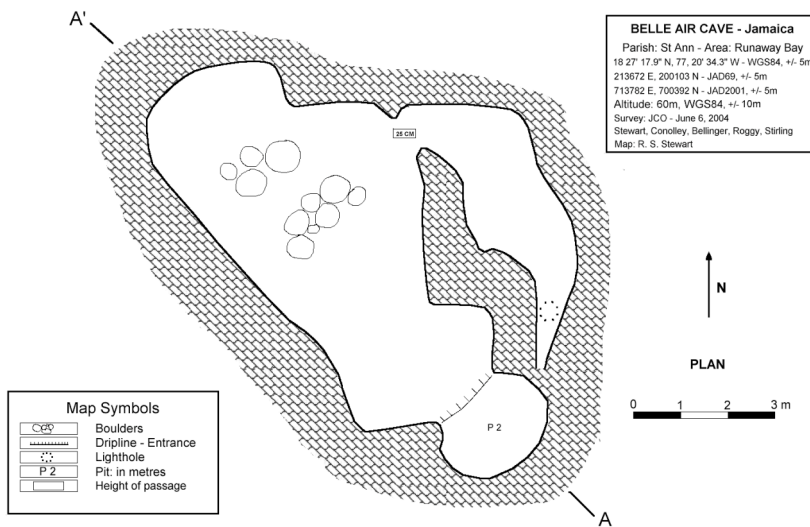


Figure 2. plan.

Belle Air cave

Human Remains Found in 2004

The remains recovered consist of the right half of a skull and a mandible (Figures 3 to 6).

In side view, the skull exhibits a “parallelo-fronto-occipital” profile (Buikstra and Ubelaker, 1994: 161), in other words it has clear signs of cranial modification, as evidenced at so many other Jamaican sites (Duerden, 1897; Santos *et al.*, 2002; Allsworth-Jones, 2008). So far as the age and sex of this individual is concerned, it seems likely that this was a young to middle aged female.

This skull has some pathological features, such as: pneumatization or swelling of the paranasal sinus, and an asymmetrical suture, piriform aperture, and palate (Figure 4). It is possible that these signs indicate a diagnosis of fibrous dysplasia, a bone disease of unknown aetiology, more common in females. It may be monostotic or polyostotic, i.e., one or more bones may be involved (Aufderheide and Rodríguez-Martín, 1998; Ortner, 2003).



Figure 3. Right half of the skull in anterior view showing asymmetry of the nasal aperture and maxilla and pneumatization of the paranasal sinus.

According to the proposal of Dias and co-authors (2007), there is an apical periodontal cyst above the left canine (Figure 3). There is evidence of caries on the second premolar, and the right third molar is impacted (Figure 4).



Figure 4. Maxilla and palate showing post mortem destruction. The palate is asymmetric. On the right side the 3rd molar is impacted and the second premolar shows caries.

A well remodelled groove (3-4 mm wide and 3 mm deep) can be seen inside the cranial vault. The rear of the skull exhibits a supernumerary bone, usually called an “Inca bone”, 56x37 mm in size (Figure 5).



Figure 5. Skull in posterior view showing a large supranumerary bone, usually called an “Inca bone”.

The mandible shows (Figure 6) that a number of teeth were absent ante mortem: on the right, the second premolar and the first and second molars, and on the left, the first to third molars. It is not certain that the mandible comes from the same individual as the skull, and certain features can be interpreted as male rather than female.



Figure 6. The mandible in superior view showing ante mortem and post mortem teeth loss.

Conclusion

Belle Air is a significant and in some respects rather unusual Pre-Columbian burial site. The age of the remains is not exactly known, although the pottery is broadly of White Marl type, and if Lee’s observations were correct it may have continued in use in the contact period. The human remains are very fragmentary, but we now know that there were at least 7 or 8 different individuals buried here. As at other sites, both sexes and all ages seem to be represented, even in this comparatively small sample. The disarticulated nature of the bones does not allow a complete determination of the biological sample profile or a full differential

diagnosis of the pathological evidence. The skull however shows signs of lesions compatible with fibrous dysplasia.

The site was only located in 1986, and fortunately the remains were taken into safe keeping. This is an indication that, despite widespread interest in the Arawak or Taino inhabitants of Jamaica over the last 100 years or so, there are still discoveries to be made. Professionals need to be on the lookout for sites such as this, and to encourage public spirited individuals such as the Johnson brothers to report their finds and to take care of them.

Acknowledgements

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