Human Skeletal Remains from the 1997 Excavations at Site BSH 2, Brimstone Hill Fortress National Park, St. Kitts, West Indies

Brimstone Hill Archaeological Project Report No. 8

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Introduction

Excavations sponsored by The Center for Field Research (Earthwatch), The Brimstone Hill Fortress National Park Society and the University of Tennessee, Knoxville at the Brimstone Hill Fortress National Park during July 1997 uncovered a single burial and two isolated elements from as many excavation units at BSH 2. Previous excavations at BSH 2 in 1996 recovered the cranial remains of Burial 1 from excavation unit 204-205N/100-101W (McKeown 1997). Burial 2 was encountered during excavations at BSH 2 in 1997 in unit 217-218N/98-99W at a depth of approximately 100-107 cm (Schoedel 1998) and elements of the right lower leg were recovered. Other human skeletal remains recovered during the 1997 field season include a cranial vault fragment from Level 1 of excavation unit 212-213N/103-104W and a single maxillary molar from Level 7 of excavation unit 210-211N/101-102W. Considering the distribution of the elements across three units from varying depths, the recovered elements probably represent three individuals.

Materials and Methods

The distal portion of the right leg associated with Burial 2 was encountered during excavation of unit 217-218N/98-99W. The unmarked grave contained an individual interred supine in an extended position with the remainder of the burial extending into the north and west profiles of the unit (Schoedel 1998). Elements recovered include a medial portion of the right distal femoral condyle, the anterior surface of the right patella, the posterior portion of the proximal articular surface of the right tibia, the majority of the right tibial shaft, the lateral distal articular surface of the right tibia, most of the right fibula excluding the proximal head,
small fragments of the right talus and cuboid and the proximal and shaft portion of a metatarsal. Basically elements of the right knee, lower leg and ankle are present.

The cranial vault fragment and the maxillary molar were not recognized as human on site and were shipped to the University of Tennessee, Knoxville, along with faunal remains for identification and analysis. At that time, Dr Walter Klippel recognized the skeletal material as human, and it was analyzed along with the other human skeletal material from BSH 2.

At the University of Tennessee, Knoxville, the remains from BSH 2 were sorted and identified. At this time, it was evident that the skeletal material had suffered erosion and degeneration of the bone due to post-depositional taphonomic forces. Application of standard skeletal biological criteria and metric analysis to post-cranial remains via FORDISC 2.0 (Ousley and Jantz 1996) provided an estimate of sex for Burial 2. Age was estimated by evaluation of epiphyseal fusion and lack of degenerative changes on articular surfaces.

Assessment of ancestry from limited postcranial elements is problematic and is not attempted in this analysis. For the skeletal elements recovered from disturbed contexts, little could be determined.

Description of Human Skeletal Material

**Burial 2 - Male, 20-30 years.** The estimation of sex is based on an analysis of four metric variables observed on both the tibia and fibula. FORDISC 2.0 (Ousley and Jantz 1996) derived a discriminant function for classifying Burial 2 as male or female based on the following measurements:

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Tibial circumference at the nutrient foramen: 95 mm
Tibial maximum diameter at the nutrient foramen: 34 mm
Tibial transverse diameter at the nutrient foramen: 24 mm
Fibular diameter at midshaft: 16 mm

With a posterior probability of .536, the results indicate that Burial 2 represents a male
(posterior probability for female = .464). While Burial 2's discriminant function score of .276
just barely falls on the male side of the sectioning point (0), the well marked soleal line on
the posterior aspect of the tibia indicates a muscular and active individual. The soleus muscle
attaches along the soleal line on the posterior aspect of the tibia and proximal aspects of the
fibula and joins the gastrocnemius muscles to form the Achilles tendon. As a major
propulsive muscle, soleus is a flexor of the ankle. In light of the rugose muscle marking and
the FORDISC 2.0 results, I am confident Burial 2 is a male.

Burial 2 represents an adult as evidenced by complete fusion of both the proximal and
distal tibial epiphyses. The broken proximal and distal portions of the tibia allow a view of
the interior cancellous bone and a horizontal line where the metaphysis existed. The retention
of the growth plate indicates that while epiphyseal union is complete, it had most likely
occurred a few years prior to death. Additionally, the lack of degenerative changes on the
articular surfaces of either the tibia or distal femur fragment indicates a younger aged
individual. Based on this information, an age range of 20-30 years is estimated.

Pathology: The anterior and lateral surfaces of the tibia and the anterior surface of the
fibula exhibit mild sclerotic activity indicative of nonspecific periostitis. Two conditions are
generally responsible for primary periostitis: an infectious disease agent and trauma (Senn
1886 in Ortner and Putschar 1981). However, from skeletal material it is very difficult to
distinguish between the two causal factors and is generally considered indicative of some sort of physiological disturbance.

**Disturbed Skeletal Material** - The isolated cranial vault fragment of an adult was recovered from Level 1 of unit 212-213N/103-104W. Since most of the endocranial surface has been destroyed by erosive forces and only a short segment of single suture is present, it is impossible to specify which cranial vault element it represents. However, the thickness of the fragment and the suture formation indicates that it is from an adult. An adult left maxillary molar was recovered from Level 7 of unit 210-211N/101-102W. Due to its size, it is most likely a second molar; however, without a definitive first molar for comparison, it is not possible to be sure. While no demographic parameters can be assessed on a single tooth, some interesting features were noted. A large interproximal carious lesion is present on the mesial surface of both the crown and root. The occlusal surface of the molar exhibits heavy attrition with all cusps worn flat exposing the underlying dentine. Enamel appears to have chipped off the buccal aspect of the crown and was subsequently worn as evidenced by the rounded, smooth edges of the region.

**Summary and Conclusions**

The human skeletal remains recovered from BSH 2 may represent as many as three individuals. The postcranial remains from Burial 2 represent a male in his 20s of unknown ancestry. The cranial vault fragment and maxillary molar recovered from the general midden of this site can only be assessed as adult.
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