*In: Proceedings of the XXIII International Congress for Caribbean Archaeology, Antigua, 2009.* print pp. 291-300; digital pp 447-459

# The Royal Naval Hospital cemetery at English Harbour, Antigua: not just the "Grave of the Englishman".

In his many publications, Desmond Nicholson frequently wrote about the important role that African slaves played in Antiguan history including the he King's Negroes, slaves owned by the Navy that filled key skilled roles in the Dockyard at English Harbour. Some of these individuals are thought to be among the interred at the nearby Royal Naval Hospital cemetery (c. 1793-1822). Study of the recovered remains of 30 individuals indicates that it was a non-segregated cemetery. Individuals identified as having African ancestry based on cranio-facial features also exhibited occupational stress markers of the skeleton and had dietary signatures (based on stable isotope analysis) that are consistent with the roles that slaves occupied in the Dockyard. Their diet separated them from both the white interred individuals in the cemetery and those of slaves from plantation cemeteries on neighbouring islands emphasizing the special niche of these individuals in terms of their status.

El Royal Navy Hospital cemetery en Engish Harbour, Antigua: "no solamente la tumba del inglés".

En muchas de sus publicaciones, Desmond Nicholson frecuentemente escribía del papel importante que los esclavos africanos jugaron en la historia Antigueña. Estos esclavos incluían a los Negros del Rey quienes eran esclavos propiedad de la fuerza naval y que desempeñaban importantes trabajos que requerían de cierta habilidad en el arsenal del English Harbour. Se piensa que algunos de estos individuos están enterrados en el cercano cementerio del Royal Navy Hospital (1973-1822 DC.). Un estudio de los restos recuperados de 30 individuos indica que este cementerio no era exclusivo. Los individuos a los cuales se les identificó como que tenían ascendencia africana en base a características cráneo-faciales también presentaron marcadores de estrés ocupacional del esqueleto y tenían características dietéticas (basadas en un análisis estable de isótopo) que eran consistentes con los papeles que los esclavos ocupaban en el arsenal. Su dieta los separaba de tanto los individuos blancos enterrados en el mismo cementerio como de los esclavos enterrados en cementerios de las plantaciones en las islas vecinas. Esto enfatiza el lugar especial que estos individuos ocupaban en cuando a su estatus.

Le Cimetière de l'Hôpital de la Marine Royale au Port Anglais, Antigua : pas simplement la «tombe de l'Anglais».

Dans ses nombreuses publications, Desmond Nicholson a fréquemment écrit au sujet du rôle important que les esclaves Africains ont joué dans l'histoire antiguaise incluant les Nègres du Roi et les esclaves possédés par la Marine qui ont rempli des rôles habiles principaux du Chantier Naval au Port Anglais. Certains de ces individus sont pensés d'être parmi ceux qui sont enterrés au cimetière de l'hôpital de la Marine Royale avoisinant (c. 1793-1822). L'étude des restes récupérés de 30 individus indique que c'était un cimetière non-séparé. Les individus identifiés en tant qu'ayant l'ascendance

africaine basée sur les traits cranio-faciaux ont également exhibé des repères d'effort du métier sur leurs squelettes et ont des signatures diététiques (basé sur l'analyse isotopique stable) qui se conformes aux rôles que les esclaves ont occupés au Chantier Naval. Leur diète les a séparés des individus blancs enterrés dans le cimetière et des esclaves des cimetières de plantation sur les îles voisines soulignant la place spéciale de ces individus en termes de leur statut.

In his many publications, Desmond Nicholson's dedication to documenting and disseminating the historic record of Antigua is evident. He frequently wrote about the important role that African and Afro-Caribbean slaves played in that history (e.g., Nicholson 1983, 1984, 1991a, 1994a, 1994b, 1995a, 2002b). Given the prominence of the Royal Naval Dockyard, both historically and in Desmond's daily life, it is not surprising that many of his books had a special emphasis on the history of what we now know as 'Nelson's Dockyard' (e.g., Nicholson 1991b, 1995b, 2001, 2002a, 2003). Although there are references in several of his books, his 2002 publication entitled "The King's Negroes: the Journal of Boatswain Fox, Antigua Navy Yard, 1820-1823' is particularly relevant to this paper as it was dedicated to these enslaved Africans that were owned by the Navy, and emphasizes the contribution of their skilled labour and craftsmanship to the development and the day to day functioning of the Dockyard (Nicholson 2002a).

Some of these individuals are thought to be among the interred in the nearby Royal Naval Hospital cemetery (c. 1793-1822). The site was excavated from 1998 to 2001. I presented a paper, co-authored with Desmond, on the preliminary findings of this project at the 1999 congress in Grenada (Varney and Nicholson 2001). This hospital is the same one that was the topic of Desmond's book "Mud and Blood" that documents the excavation of an associated midden and includes the historic map shown in Figure 1 that shows the location of the burial ground (Nicholson 1995b). In summary, at the time of its

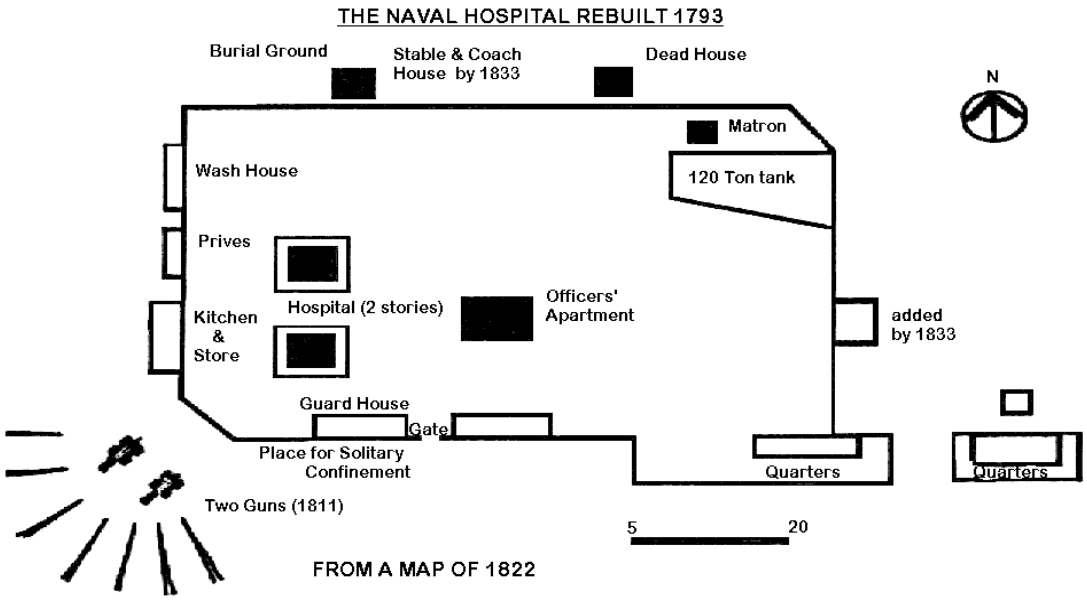


Figure 1: Map of the Royal Naval Hospital showing location of cemetery in upper left hand corner (taken from Nicholson 1995).

excavation the entire cemetery was known to present-day inhabitants of the area but was unmarked with the exception of a single tombstone that now resides within the Dockyard Museum. The location is now a residential neighbourhood, and continuous development over the years has destroyed and/or disturbed much of the site. From a relatively undisturbed portion of the site, thirty individuals were recovered from twenty-six graves. The recovered remains consist of twenty-two adults and nine sub-adults, five of which were under the age of five years. All adults were determined to be male which may be more of a sample bias than a reflection of the dockyard population at that time. Most of the burials were single interments, a few were multiple sequential interments and there was a sole purposeful double burial. All of the interments were very similar with regard to style and sparse associated funerary objects. However, initial study of the twenty-two

adult individuals recovered indicated that this was a non-segregated cemetery. This fact was significant in itself because it is the only excavated interred sample of mixed descent known to the author and colleagues. Cranio-facial features were assessed as per standard forensic anthropological analyses (Gill and Gilbert1990; Rhine 1990) were used to differentiate between individuals of different ancestry. Individuals identified as having African[i] or Black[ii] ancestry also exhibited occupational stress markers of the skeleton consistent with the roles with hard physical labour.

Historical documentation, mainly found by Desmond, confirmed that dockyard slaves were treated and died at the hospital (Nicholson 1995b). As Desmond wrote in his book 'The Journal of Boatswain Fox' (Nicholson 2002a), although there is no absolute proof that all of the men of African descent serving in the dockyard were slaves, given the historical context it is probable most were.

Furthermore as presented at the 1995 Trinidad congress (Varney 2007), stable isotope analysis has demonstrated that individuals of African descent also had chemical signatures left in their bones that were consistent with the historically documented diet consumed by slaves. It is this latter point that is the focus of this paper in order to further elucidate the identity of the individuals of African descent found in this cemetery.

As already outlined, stable isotope analysis was used to differentiate individuals of different ancestries. Only about half of the adult interred could be identified as to general ancestry. This was due to poor preservation or post-mortem disturbance of the cranio-facial skeleton, so the finding that dietary reconstruction could differentiate between groups[iii] was a valuable finding that allowed some insight into the identity of the interred and the fact that this cemetery was not just 'the grave of the Englishman'.

Since dietary reconstruction via stable carbon (C) and nitrogen (N) isotope analysis has become commonplace and well established in archaeology only a brief explanation will be given here and readers are referred to the detailed review of the relevant theoretical background and methodology in Katzenberg (2008). The goal of stable C and N analyses is to measure the relative importance of general food categories in the diet of the individuals or population(s) under study. Analytical results are expressed as del or δ values in parts per mil (‰) where the given value is the ratio of stable isotopes (for carbon, $^{13}C/^{12}C$ ; for nitrogen, $^{15}N/^{14}N$) in the sample relative to that of an international standard. Since biological tissues generally contain less $^{13}C$ than the standard, their $\delta^{13}C$ values are negative numbers. In contrast, $\delta^{15}N$ values of biological tissues are usually positive numbers since they generally contain more $^{15}N$ than atmospheric $N_2$. The following is a very brief and basic outline of the basic principles of stable isotope variation. Detailed discussion can be found in Katzenberg (2008) that includes the many factors that affect isotopic variation. Briefly, variation in the $\delta^{13}C$ values in consumers such as humans reflects that of the plants that provide the base staple of their diet; the $\delta^{13}C$ values of these plants are incorporated into the body tissues of consumers. Plants can be divided into two groups, denoted C3 and C4 plants that have non-overlapping $\delta^{13}C$ values. C4 plants include maize/corn, millets (including sorghums) and sugar cane and have $\delta^{13}C$ values ranging from -21 to -9‰ with a mean of -13‰; C3 plants include wheat, rye, oats, barley, temperature trees, rice, beans, fruits, and vegetables including root crops and have $\delta^{13}C$ values ranging from -22 to -38‰, with a mean of -27‰. A third group, CAM plants (succulents), has $\delta^{13}C$ values intermediate to the C3 and C4 plants. Marine resources have $\delta^{13}C$ values that overlap those of C4 plants.

The use of $\delta^{15}N$ values can elucidate more detailed dietary information particularly in cases where foods with overlapped or intermediate values may be being consumed. $\delta^{15}N$ values indicate the overall trophic level at which a consumer is feeding and are higher towards the upper end of the foodchain so that herbivores have higher values than plants, and carnivores have higher values than herbivores. Marine animals tend to have higher $\delta^{15}N$ values than do terrestrial animals due to the greater number of trophic levels in marine environments (Schoeninger and DeNiro 1984). Human populations consuming substantial amounts of marine protein have been demonstrated to follow the same pattern (Schoeninger et al. 1983).

In archaeology, the most common medium of analysis is the skeleton as it tends to preserve well in the post-depositional environment. Analysis of different components of bone provides somewhat different information about diet. The $\delta^{13}C$ and $\delta^{15}N$ values of bone collagen (protein) reflect dietary protein while the $\delta^{13}C$ values of bone apatite (mineral) reflect the whole diet and are strongly influenced by carbohydrates and fats (Ambrose and Norr 1993; Tieszen and Fagre 1993). Bone collagen and apatite $\delta^{13}C$ values are approximately +5‰ and +9‰ respectively relative to dietary values, while $\delta^{15}N$ values of bone collagen tend to be about +3‰ relative to dietary values; these values do show some variation depending upon the exact composition of the diet (Ambrose et al. 1997).

And as briefly outlined above, the technique is premised on the fact that the general isotopic composition of the diet consumed is reflected in the skeleton, and as such, bone samples weighing approximately 1g were taken from of each individual using either a rib, or a long-bone if the ribs were not well preserved. Bone collagen was

isolated following the method of Sealy (1986) with modifications to remove humic contaminants (Varney 2003:110) and bone apatite was isolated using the method of Lee-Thorp (1989) with modifications by Garvie-Lok and colleagues (2004). Samples that had collagen and apatite of good integrity (see Varney 2003 for full description of all methods) were then subject to stable isotope analyses at the Stable Isotope Laboratory, Department of Physics and Astronomy at The University of Calgary.

Before stable isotopic data from interred human populations can be interpreted, some knowledge of the foodstuffs that were available for consumption or were actually consumed is essential for an accurate dietary reconstruction. Historical sources generally describe the primary staples of slave diet as consisting of a variable mixture of maize/corn and/or millet with root crops such as cassava, yams and taro, rounded out with a variety of vegetables and fruits. The main protein sources are usually attributed to imported salt fish, with smaller amounts of poultry and meat of both imported and local origin (Abrahams and Szwed 1983; Debien 1964; Dunn 1972; Foster and Foster 1996; Higman 1984; Klein 1999; Sheridan 1985; Ward 1988).

In contrast, European military personnel had a tendency to maintain a diet typical of their homelands. Their primary staples were imported cereal grains such as wheat and oats rounded out with locally available foodstuffs. Much of their dietary protein was also imported in the form of salted beef and pork, although that was supplemented with local livestock (Buckley 1998; Duffy 1987; Dyde 1997; Lloyd and Coulter 1961). The navy is known to have had contracts with the Coderington operations on neighbouring Barbuda for both sheep and cattle (Lowe 1968; Nicholson 2002b; Thomas 1798-1799). However, it was beyond the capacity of any of the Caribbean islands to provide the quantities of

foodstuffs required by the Navy, particularly in wartime, and the reliance was largely upon imported goods (Crewe 1993:147).

If the aforementioned historic sketches of diet were adhered to by colonial populations, the differences in the primary staples and protein sources should result in corresponding differences in stable isotopic values. It was expected that individuals consuming a 'European or colonial' diet would have bone collagen $\delta^{13}C$ values ranging from about –21 to –17‰ and $\delta^{15}N$ values ranging from 9 to 12‰. In contrast, it was expected that individuals consuming an 'African or slave' diet would have bone collagen $\delta^{13}C$ values ranging from about –16 to –12‰ and $\delta^{15}N$ values ranging from 13 to 15‰. This range of expected isotopic values from bone collagen from the two different dietary regimes is shown in Figure 2, with European diet having more negative $\delta^{13}C$ values and moderate $\delta^{15}N$ values. Values for slaves would be less negative $\delta^{13}C$ values due to the inclusion of maize and guinea corn/millet, as well as livestock fed with these staples as well as marine fishes. Higher $\delta^{15}N$ values would be expected from the large portion of protein coming from fish as well. In Figure 2, as well as those yet to follow, the blocks of data represent mean values with the total range of values around it and the entire area shaded in to encompass the maximum area that the individual values fall into.

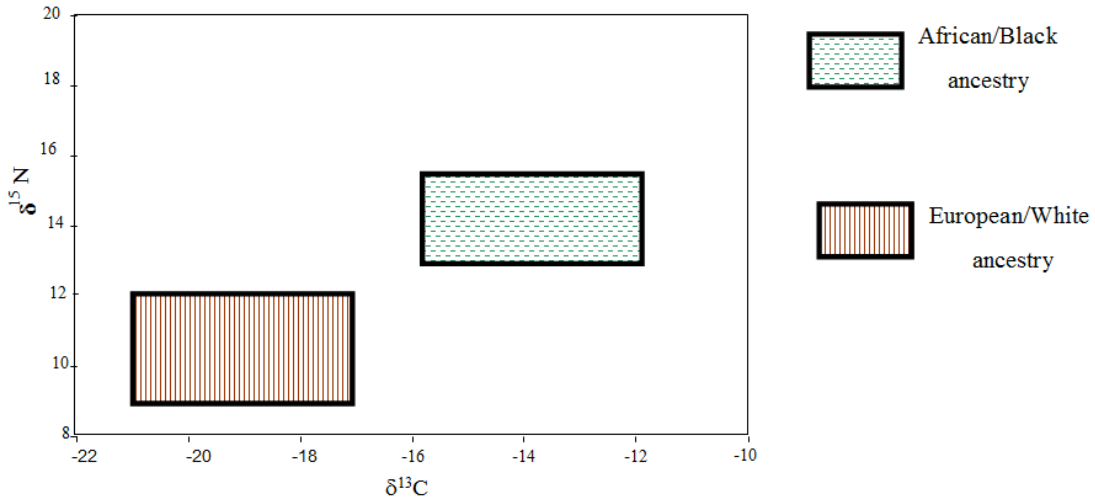


Figure 2: Expected isotopic values for bone collagen based on dietary information found in historical sources.

So moving from expected values to the actual data, Figure 3 displays the $\delta^{13}C$ and $\delta^{15}N$ values from the bone collagen of the individuals interred in the Royal Naval Hospital cemetery.

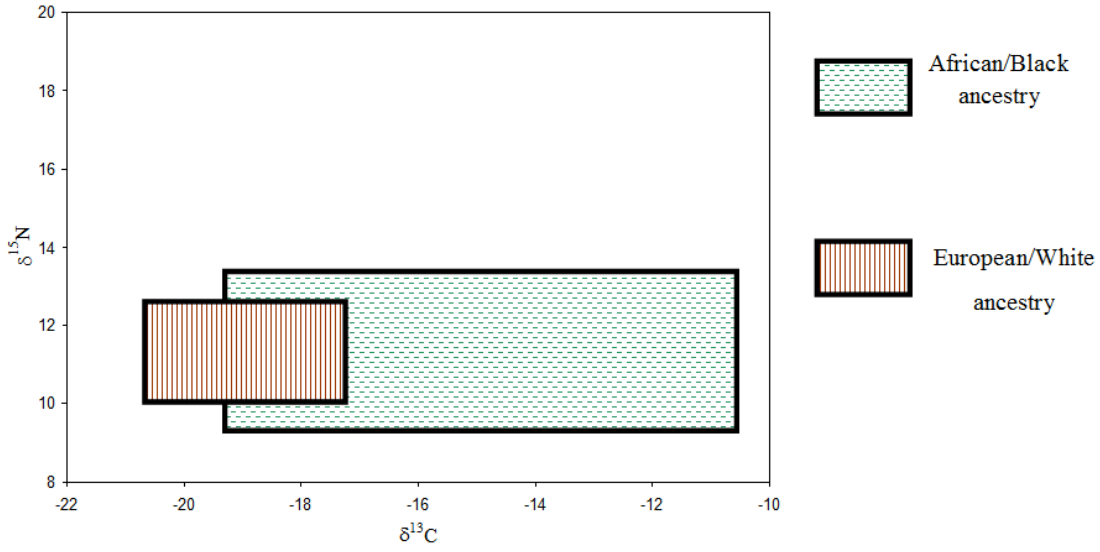


Figure 3: Actual stable isotopic values for bone collagen of individuals interred in the Royal Naval Hospital.

The isotopic ratios demonstrate that individuals of different ancestry interred in this cemetery did consume different diets although not as drastically or in precisely the pattern expected. As predicted, individuals of European/White ancestry have stable carbon isotope values typical of what is expected from consuming a primarily European style diet with a range from -20.8 to -17.0‰ (mean = -18.9‰) They also have a more limited range of stable carbon isotope values when compared to that of the individuals of African/Black ancestry interred in this cemetery who had a range of δ13C values from -19.5 to -10.5‰ (mean = -15.8‰).

The latter group (n=8) does include three individuals with overlapping stable carbon isotope values with the former group (n=8), but overall the individuals of African/Black ancestry have a greater range of isotope values that extends into the more positive values. And it is in this more positive range that we would expect to see in

people consuming the typical slave diet described in historical sources. The greater diversity in the values for individuals of African/Black ancestry is not surprising as individuals would have had different foodstuffs available to them both through provisioning and self procurement.

Interestingly, groups of both ancestry[ii] had similar nitrogen isotope values that reflect dietary protein coming mainly from terrestrial mammals (European/White = 10.4 to 12.8‰; African/Black = 9.9 to 13.2‰; mean for both groups was 11.9‰). This result was unexpected for the individuals of African/Black ancestry if they had been consuming the diet outlined in historical sources which included substantial fish. The individuals of African/Black ancestry interred in this cemetery show more diversity in their stable nitrogen isotope values although not to the same extent as seen in the stable carbon isotope values. These trends can best be interpreted as groups of both ancestries[ii] eating similar protein from similar sources in terms of trophic level, probably terrestrial mammals, but with the individuals of African/Black ancestry often having different base dietary staples including maize and/or Guinea corn (sorghum).

The bone collagen data shown in Figure 3 provide an incomplete picture of the diet of the interred. The isotopic data from the bone apatite shown in Figure 4 both refines and confirms that picture.

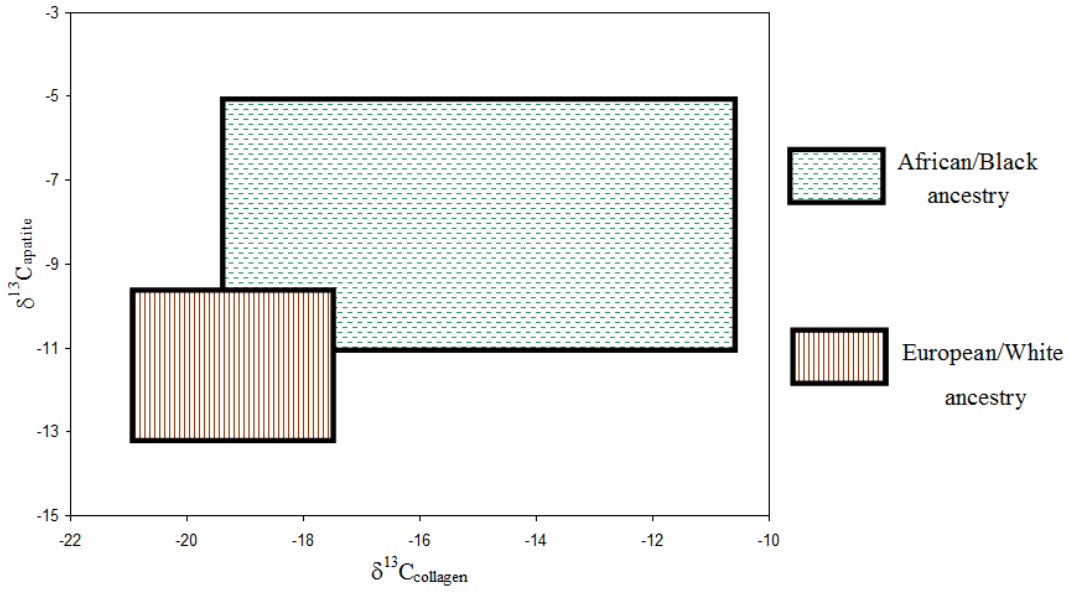


Figure 4: Stable isotopic values for bone apatite of individuals interred in the Royal Naval Hospital.

The same three individuals of African/Black ancestry once again have isotopic values overlapping $\delta^{13}C$ values with the European/White descended group (African/Black= -10.9 to -4.9‰; European/White = -13.3 to -4.9‰), however the mean values for apatite for the two groups are more disparate than the mean values for collagen (-8.3‰ and -11.2‰ respectively). Since the isotopic values of apatite reflect the whole diet and are strongly influenced by carbohydrates and fats, the greater difference in $\delta^{13}C$ values between the two groups most likely reflects different dietary staples rather than protein sources. The African/Black group was consuming a more diverse diet on the individual level in terms of staples with some individuals eating staples similar to the European/ White group. In terms of protein sources, all adults regardless of ancestry were consuming a similar diet.

This is admittedly a small sample, and we do not have another equivalent sample of mixed ancestry to compare it to since this is the first isotopic study on colonial era populations of the Caribbean. However, isotopic data for two other probable slave cemeteries: the Harney site, Montserrat and Sainte-Marguerite, Guadeloupe is available (Varney 2003, 2007). Both of these populations have isotopic values that meet with the aforementioned expectations of slave diet as described in historical sources ($\delta^{13}C_{collagen}$ = -18.2 to -11.2‰; δ15N = 11.1 to 17.9‰; $\delta^{13}C_{apatite}$ = -7.6 to -5.4‰), and when they are compared to the isotopic data of the bone collagen from the Naval Hospital cemetery as seen in Figure 5, these other populations of African/Black ancestry have $\delta^{13}C$ values that overlap with those of both the African/Black and the European/White groups, however, it is only one individual out of sixty-eight that overlaps with the latter group.

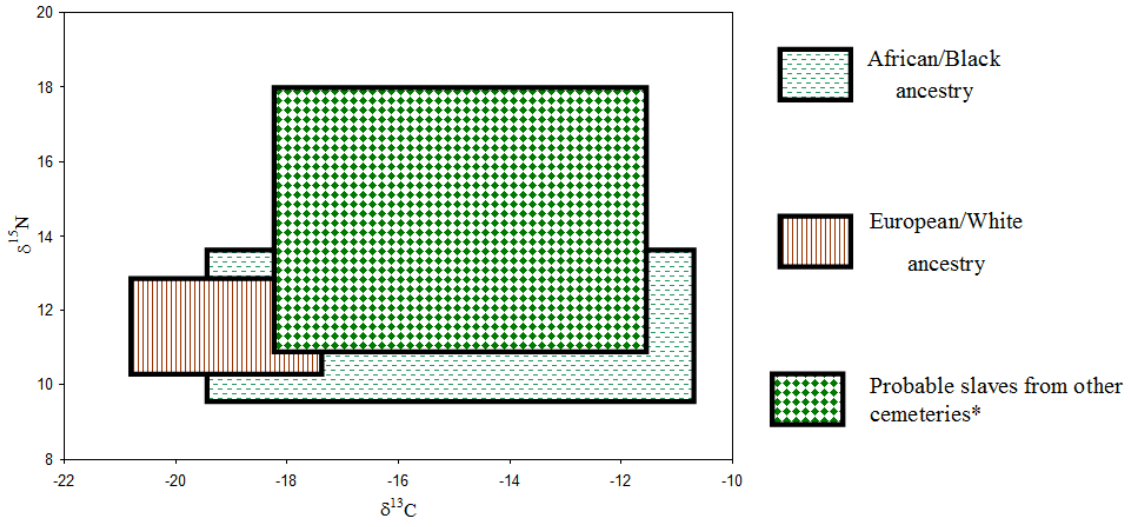


Figure 5: Comparison of stable isotopic data for bone collagen of individuals interred in the Royal Naval Hospital with that from probable slaves interred in two other cemeteries – St. Marguerite, Guadeloupe (n=60) and Harney, Montserrat (n=8) .

There is a small overlap in $\delta^{15}N$ values between the outliers in the two slave cemetery populations and those of the European/White group from the Naval Hospital cemetery

but it is not substantial and reflects the greater range of variation with the former group. A similar situation is seen with the isotopic data of the bone apatite as seen in Figure 6 although the disparity between isotopic values for the European/White group from the Naval Hospital cemetery and those of the probable slaves from Guadeloupe and Montserrat is emphasized. The two do not overlap at all.

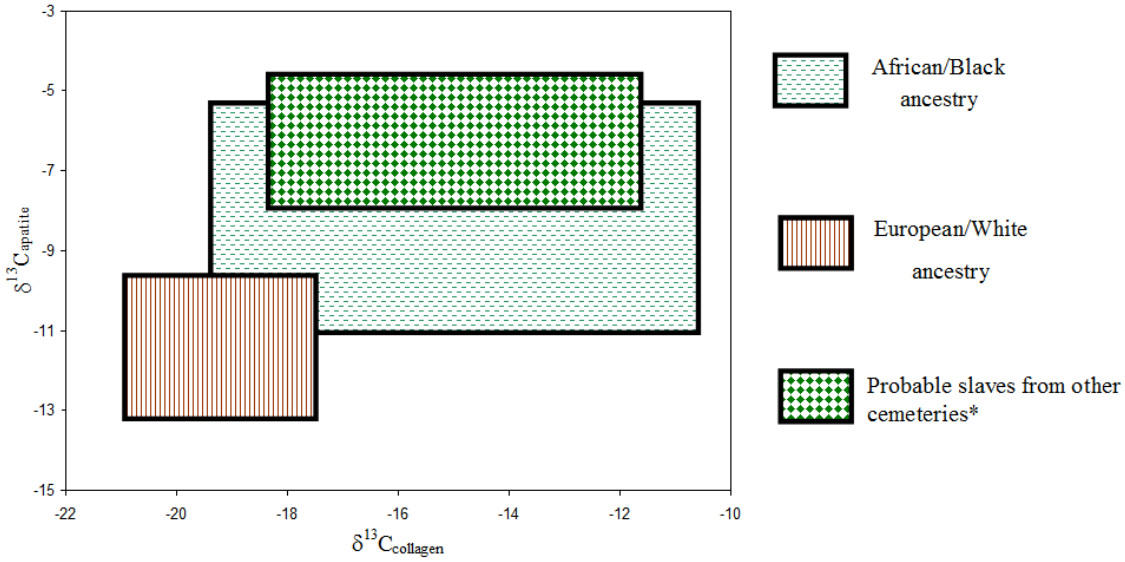


Figure 6: Comparison of stable isotopic data for bone apatite of individuals interred in the Royal Naval Hospital with that from probable slaves interred in two other cemeteries – St. Marguerite, Guadeloupe (n=60) and Harney, Montserrat (n=8) .

The fact that the African/Black group from the Naval Hospital cemetery has isotopic values indicating a diet with more individual diversity in carbohydrate base staples and a protein source very similar to the European/White group is likely related to their status as Naval owned slaves. This status may have allowed them different access to resources than other slaves, as well as influencing their choice of which resources to exploit (Buckley 1998; Dyde 1997; Voelz 1993).

In conclusion, it would appear that some of the King's Negroes from the time period of 1793 to 1822 have been identified in the Royal Naval Hospital cemetery based on their unique status long after their deaths. And the Royal Naval Hospital is truly not simply 'the grave of the Englishman'.

Acknowledgements

Special thanks to Desmond Nicholson and Dr. Reginald Murphy for their inspiration and support in the RNH cemetery project. Thanks to Dr. David Watters, Carnegie of Natural History for access to samples from the Harney cemetery. Dr. Patrice Courtaud, and Thomas Romon, CNRS-Laboratoire d'Anthropologie have my gratitude for access to samples from the Sainte-Marguerite cemetery as well as financial support for their analysis. Funding for this project was also provided by doctoral fellowships from the Social Sciences and Humanities Research Council (SSHRC) and the Organization of American States (OAS). Thanks to Dr. Annie Katzenberg, Dept. of Archaeology, University of Calgary for training and lab space.

References Cited

Abrahams, R.D. and Szwed, J.F. 1983. After Africa: extracts from British travel accounts and journals of the seventeenth, eighteenth and nineteenth centuries concerning the slaves, their manners, and customs in the British West Indies. Yale University Press, New Haven.

Ambrose, S.H. and Norr, L. 1993. Experimental evidence for the relationship of the carbon isotope ratios of whole diet and dietary protein to those of bone collagen and carbonate. In Prehistoric human bone: archaeology at the molecular level, edited J.B. Lambert and G. Grupe. Springer-Verlag, Berlin. Pp. 1-37

Buckley, R.N. 1998. The British Army in the West Indies: society and the military in the revolutionary age. University Press of Florida, Gainsville.

Crewe, D. 1993. Yellowjack and the worm: British Naval Administration in the West Indies, 1739-1748. Liverpool University Press, Liverpool, UK.

Debien, G. 1964. La Nourriture des esclaves sur les plantations des Antilles Françaises aux XVIIè et XVIIIè siècles. Caribbean Studies 4(2):3-27.

Duffy, M. 1987. Soldiers, sugar and seapower: the British expeditions to the West Indies and War against Revolutionary France. Clarendon Press, Oxford.

Dunn, R.S. 1972. Sugar and Slaves: the rise of the planter class in the English West Indies, 1624-1713. The University of North Carolina Press, Chapel Hill.

Dyde, B. 1997. The Empty Sleeve: the story of the West India Regiments of the British Army. Hansib Caribbean, St. John's, Antigua, WI.

Foster, E. and Foster, R. 1996. Sugar and slavery, family and race. The letters and diary of Pierre Dessalles, planter in Martinique, 1808-1856. The Johns Hopkins University Press, Baltimore.

Garvie-Lok, S.J., Varney, T.L. and Katzenberg, M.A. 2004. Preparations of bone carbonate for stable isotope analysis: the effects of treatment time and acid concentration. Journal of Archaeological Science 31(6):763-776.

Gill, G.W. and Gilbert, B.M. 1990. Race identification from the midfacial skeleton: American blacks and whites. In Skeletal attribution of race: methods for Forensic Anthropology, edited by G.W. Gill and S. Rhine. Maxwell Museum of Anthropology, Anthropological Papers #4. University of New Mexico, Albuquerque. Pp. 329-339.

Higman, B.W. 1984. Slave populations of the British Caribbean 1807-1834. John Hopkins University Press, Baltimore.

Katzenberg, M.A. 2008. Stable isotope analysis: a tool for studying past diet, demography, and life history. In Biological Anthropology of the human skeleton, Second Edition, edited by M.A. Katzenberg and S.R. Saunders. Wiley-Liss, Inc, New York. Pp. 413-442.

Klein, H.S. 1999. The Atlantic Slave Trade. Cambridge University Press, Cambridge, UK.

Lee-Thorp, J.A. 1989. Stable carbon isotopes in deep time: the diets of fossil fauna and hominids. Unpublished Ph.d. dissertation, University of Cape Town, South Africa.

Lloyd, C. and Coulter, J.L.S. 1961. Medicine and the Navy: 1200-1900, Volume III – 1714-1815. E. & S. Livingstone Ltd., Edinburgh and London.

Lowe, R. 1968. The Coderington Correspondance, 1743-1851. Robson Lowe, London.

Nicholson, D.V. 1983. The Story of the Arawaks in Antigua and Barbuda. Museum of Antigua and Barbuda. St. John's, Antigua and Barbuda, W.I.

Nicholson, D.V. 1984. Antigua and Barbuda: Place Names and their Stories. Museum of Antigua and Barbuda. St. John's, Antigua and Barbuda, W.I.

Nicholson, D.V. 1991a. Antigua, Barbuda, Redonda: a historical sketch. Museum of Antigua and Barbuda. St. John's, Antigua and Barbuda, W.I.

Nicholson, D.V. 1991b. The Story of English Harbour, Antigua, West Indies. Museum of Antigua and Barbuda. St. John's, Antigua and Barbuda, W.I.

Nicholson, D.V. 1994a. Antigua and Barbuda: Forts. Museum of Antigua and Barbuda. St. John's, Antigua and Barbuda, W.I.

Nicholson, D.V. 1994b. Heritage Landmarks: Antigua and Barbuda. Museum of Antigua and Barbuda. St. John's, Antigua and Barbuda, W.I.

Nicholson, D.V. 1995a. The Archaeology of Antigua and Barbuda. Museum of Antigua and Barbuda. St. John's, Antigua and Barbuda, W.I.

Nicholson, D.V. 1995b. Mud and blood: artifacts from harbour dredging and the Naval hospital at English Harbour, Antigua. Proceedings of the 15th Congress for Caribbean Archaeology, Puerto Rico, 1993. P. 45.

Nicholson, D.V. 2001. Scratch and Tell: sailor's graffiti from English Harbour, English Harbour, Antigua. Proceedings of the XVIII International Congress for Caribbean Archaeology, Grenada, WI, 1999. Volume I: 336-344.

Nicholson, D.V. 2002a. The King's Negroes: the journal of Boatswain Fox, Antigua Navy Yard, 1820-23. The Dockyard Museum, English Harbour, Antigua and Barbuda, W.I.

Nicholson, D.V. 2002b. Antigua and Barbuda: Shipwrecks and Other Marine Disasters. Museum of Antigua and Barbuda. St. John's, Antigua and Barbuda, W.I.

Nicholson, D.V. 2003. Africans to Antiguans: the slavery experience. A historical index. Museum of Antigua and Barbuda. St. John's, Antigua and Barbuda, W.I.

Rhine, S. 1990. Non-metric skull racing. In Skeletal attribution of race: methods for Forensic Anthropology, edited by G.W. Gill and S. Rhine. Maxwell Museum of Anthropology, Anthropological Papers #4. University of New Mexico, Albuquerque. Pp. 9-20.

Sealy, J. 1986. Stable carbon isotopes and prehistoric diets in the South-western Cape Province, South Africa. BAR International Series 293.

Schoeninger, M.J. and DeNiro, M.J. 1984. Nitrogen and carbon isotopic composition of bone collagen from marine and terrestrial animals. Geochicia et Cosmochimica Acta 48:625-639.

Schoeninger, M.J., DeNiro, M.J. and Tauber, H. 1983. Stable nitrogen isotope ratios of bone collagen reflect marine and terrestrial components of prehistoric human diet. Science 220:1381-1383.

Sheridan, R.B. 1985. Doctors and Slaves: a medical and demographic history of slavery in the British West Indies, 1680-1834. Cambridge University Press, Cambridge.

Thomas, A. 1798-1799. Journal of Aaron Thomas. Transcribed by EH Locke, Otto G. Ritchter Library, University of Miami, Florida.

Tieszen, L.L. and Fagre, T. 1993. Effect of diet quality and composition on the isotopic composition of respiratory $CO_2$, bone collagen, bioapatite, and soft tissues. In Prehistoric Human Bone: archaeology at the molecular level, edited by JB Lambert and G Grupe. Springer-Verlag, Berlin, pp.121-155.

Varney, T.L. 2003. Reconstructing diet and tracing life histories in colonial populations of the Northeastern Caribbean using stable carbon and nitrogen isotopes. Unpublished Ph.d. dissertation, Dept of Archaeology, University of Calgary, Calgary, AB, Canada.

Varney, T.L. 2007. Does diet reflect group membership? A stable isotope analysis of human remains from the Royal Naval Hospital cemetery at English Harbour, Antigua, W.I. Proceedings of the XXI International Congress for Caribbean Archaeology, Trinidad, 2005. Volume 2, 667-676.

Varney, TL and Nicholson DV 2001 Digging the "Grave of the Englishman": a preliminary report on excavations at a former British Navy Hospital cemetery, English Harbour, Antigua. Proceedings of the XVIII International Congress for Caribbean Archaeology, Grenada, WI, 1999. Volume I: 329-335.

Voelz, P.M. 1993. Slave and the Solider: the military impact of blacks in the colonial Americas. Garland Publishing, Inc., NY.

Ward, J.R. 1988. British West Indian Slavery, 1750-1834: the process of amelioration. Clarendon Press, Oxford.

---

[i] these ancestral categories are consistent with the most likely geographic origin of the individuals given the assessment of their cranio-facial features with forensic anthropological methods.

[ii] these ancestral categories are consistent with those given in the cited forensic anthropological methods and similar literature in general, however, for clarity, both sets

of terms are used with the acknowledgement that they are very general and do not necessarily reflect the diversity of social or biological degrees of ancestry.

[iii]as identified by the assessment of cranio-facial features.