

# Some Comments on the Archaeology of Slave Diets and the Importance of Taphonomy to Historical Faunal Analyses

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**Abstract** The archaeology of enslaved peoples carries great value as the material culture often represents the only documentation of their lives. Slave diet has been a major focus within the archaeology of enslaved Africans in North America, but a number of influential faunal analyses such as those from Cannon's Point, Georgia, and Monticello, Virginia, are problematic due to the limited use of taphonomic investigations. At these sites, patterns identified in the faunal remains were attributed to human behavior, but instead the patterns are more plausibly the result of methodological issues and destructive taphonomic processes acting on the bones post-depositionally. The importance of applying taphonomic research to historic faunal analyses is illustrated through a reanalysis of the fauna from the South African Castle of Good Hope's Granary which was originally attributed to slaves. In the end, this review of previous slave diet studies and reanalysis of the Granary faunal remains seeks to emphasize further integration of taphonomic and actualistic research into historical period zooarchaeology.



*Decades ago*, Charles Fairbanks (1974; Ascher and Fairbanks 1971) helped bring the attention of historical archaeologists away from the main houses to the cabins of enslaved laborers in order to explore those who were least able to document their own lives. Subsequent investigations into the residues of the lifeways of enslaved Africans has produced a rich literature that has sought to understand how slave families obtained food through provisioning by plantation owners (referred to as “planters”), to identify how slaves developed diasporic cultures through their own agency, and to learn how enslaved laborers resisted or circumvented the control and limitations placed upon them by the European Americans who worked to subjugate them. The archaeology of enslaved Africans in American contexts is particularly important since their material culture provides the “critical” information about their lives which have generally not been recorded (Deetz 1996: 212–213). The archaeology of enslaved Africans in America also can provide wider value because such studies can supply comparative information for investigations into slavery in colonial South Africa (Hall 1992, 1999, 2000, n.d.a.; Jordan 2006), Europe, the Classical Greek and Roman civilizations (Webster 2008), and other locations where people were forced into servitude.

Diet can provide a particularly powerful body of evidence in the context of slavery because it can speak directly to personal experiences in a situation where buttons, coins, and other materials can plausibly represent tasks such as clothes washing for the master (e.g., Jordan 2006). Evidence of slave diet can potentially speak to the wide range of food-related activities such as: provisioning; personal food production; supplementation through hunting, fishing, or stealing; and cuisine through the ingredients, cooking, or butchery patterns. Since slaves worked and were housed in many diverse environments, in urban and rural contexts, under cruel as well as compassionate masters and overseers, it is difficult to make broad generalizations about the dietary experiences of enslaved Africans. Historical records emphasize the disparate experiences of slaves in regard to food supplies, preparation, and consumption. Records created by European American planters often report that slave owners provided sufficient rations to maintain the “soundness” of their investments (Covey and Eisnach 2009: 11–19). In contrast, numerous accounts such as those from Fredrick Douglass (1845: 10, 17) and interviews recorded in the Works Progress Administration (WPA) narratives refute these claims and tell of insufficient or spoiled provisions and the need to steal or hunt in order to supplement dietary needs (Covey and Eisnach 2009: 30–38, 97–99).

Due to slavery’s inherent condition of subjugation, archaeological re-

search has often viewed slave diet in terms of limited access to sufficient or preferred amounts and types of food. This perception has been partly influenced by the testimonies of former slaves and partly by analyses from the 1970s and 1980s such as John Solomon Otto's (1977, 1984) at Cannon's Point, Georgia and Diana Crader's (1984, 1989, 1990) at Thomas Jefferson's Monticello, Virginia that compared faunal residues associated with different plantation social classes. Similar conclusions were made at both sites: enslaved laborers generally had limited access to the meatiest parts of the domestic animals, slaves severely smashed bones to make stews and to extract as many nutrients as possible, and they ate older animals, while their owners predominately ate neatly proportioned roasts and they ate prime aged or younger animals. The interpretations by Otto and Crader have been regularly cited as comparative research (e.g., Fountain 1995: 72; Lev-Tov 2004: 307–308, 311; McKee 1999: 228–229; Samford 1996: 95–96; Singleton 1995: 126), including the investigations into South African slave life by Martin Hall (2000, n.d.a) at sites such as the Granary within the Castle of Good Hope in Cape Town, South Africa. Hall's discussions on slavery and underclass resistance have been taken up in studies outside of historical archaeology such as Jane Webster's 2008 discussion of using comparative information from historic period sites to interpret Classical Roman slavery.

### **Taphonomy Can Inform Refinements of Previous Slave Diet Research**

Archaeological faunal remains can provide a range of data that can be used to reveal past relationships between people, their environment, their animals, and the meat and other products obtained from their animals. Beyond the biological need to eat, across human cultures, foodways have been encoded with meaning tied to identities defined or influenced by cultural heritage and social structures. As Larry McKee (1999: 218) states, archaeologists should use faunal remains to “provide a bridge to the exploration of the elements of human social organization enveloping diet and nutrition.”

While faunal remains can be one of the most powerful categories of material culture, we must be aware that bones are rarely static artifacts. Back in 1987, Elizabeth Reitz cautioned the historical archaeology community that faunal remains are subject to a number of destructive taphonomic agents that could modify the originally deposited faunal assemblage. Faunal remains, particularly bones, contain significant organic components that cause them to have

unique depositional histories compared to most other classes of artifacts. Bones are subject to both intentional and unintentional breakage through human and natural processes such as butchery, trampling, grease and meat scrap scavenging by carnivores, weathering by natural elements, and decay by diagenesis. Fortunately, bones often record evidence of these processes which can allow us to reconstruct their depositional histories in order to get a more accurate picture of the human behaviors that deposited the bones (Lyman 1994: 294–403).

With rare exceptions (Landon 2005: 5–6), researchers have not heeded Reitz's notice and taphonomic investigations have continued to not be fully incorporated into historic period faunal analyses. Widely, taphonomy has continued to be treated with mediocre applications of the wide array of research available from the prehistoric and international zooarchaeological spheres. Some may feel that taphonomic investigations are less relevant to historic-period sites since the human source of the faunal collections is less tenuous than in ancient palimpsests from the African savannah. However, the value of taphonomy to historic-period analyses is to allow for better understandings of post-depositional processes that could have modified and obscured the evidence of human behavior. An archaeologist must be aware that the sites were not the static dioramas that one may picture in texts or museums; instead they were places of activity with people and animals moving and interacting on the surfaces where bones were deposited.

Reitz (1987) mainly discussed issues concerning analytical methods that affect interpretations about socioeconomic status, though her discussions about post-depositional taphonomic traces were not fully applied to the sites she critiqued. This paper aims to demonstrate how taphonomic traces on bone surfaces can be used to re-evaluate previous slave diet research particularly at Cannon's Point, Monticello, and Rich Neck in the American contexts, and the Granary within the Castle of Good Hope. Slave diet is addressed because of the significant political, social, and racial implications. These sites have been chosen because their samples are attributable to enslaved laborers, overseers (at Cannon's Point), and planters since they lived apart from each other, so therefore their deposits are not likely mixed. These sites have also been chosen because they are widely known and cited as comparative resources for slave diet. After the discussions of Cannon's Point, Monticello, and Rich Neck, this article will demonstrate how taphonomic investigations aid in the reanalysis of a faunal sample from the Granary in the Castle of Good Hope, in Cape Town, South Africa which was previously interpreted as food residue deposited by enslaved laborers (Hall 1992: 389; 1999: 196; n.d.a).

It must be stressed that each work discussed here is a product of and a contribution to the development of historic-period zooarchaeology. Each project of the American research incorporated contemporary methodologies that were state-of-the-art and sophisticated for their times. Importantly, each work advanced our knowledge about how faunal remains can inform us of past lives, particularly due to the physiological and cultural importance of foodways in people's lives. The goal of this article is to analyze these previous studies in order to advance interpretative frameworks in zooarchaeology even further, thus allowing earlier research to maintain relevance by informing anthropologists and historians as the discipline continues to develop.

### **Reinterpreting Previous Studies of Slave Diet Collections**

One of the first points of a faunal analysis should be to consider the context from which the bones were recovered to determine if those conditions may have played a role in the final appearance of the sample. A researcher should expect bones in refuse middens to have been subject to greater degrees of trampling, scavenging, and weathering than those dumped into a deep hole. Otto reveals that the fauna from all three sites at Cannon's Point were recovered from refuse middens originally dumped on the historic ground surface. The slave cabin midden was directly outside the door in the immediate place where foot traffic and other activities occurred (Otto 1984: 45). The middens at the overseer's and planter's houses were found behind detached kitchens, meters away from the respective houses. The planter's midden was adjacent to a swamp and probably in an area of limited human activity (Otto 1984: 103, 136–138). Recovery techniques were thorough and easily overlooked specimens from wild mammals and fish were recovered.

High degrees of fragmentation are expected when samples are derived from surface deposits, and this fragmentation is reflected through the high proportions of unidentifiable bones in all three middens of the Cannon's Point sites (Table 1). A high degree of fragmentation correlates with low identifiability to the species taxon as well as to specific bone elements. Generally, the diagnostic portions of bones are low in density and susceptible to destruction through carnivore chewing, trampling, and weathering, all of which are common actors on surface deposits. After exposure and fragmentation, the most identifiable elements left behind tend to be the hard teeth and small, diagnostic foot bones, while the softer bones such as vertebrae and pelves are destroyed and long bones are reduced to less diagnostic midshaft fragments (e.g., Binford and Bertram

**Table 1. Summary of the faunal data from Cannon's Point Plantation.**

Tenancy	Placement and Contents
Slave Cabin #3	<ul style="list-style-type: none"> <li>• Midden outside door (Otto 1984:45)</li> <li>• 45.1% unidentified mammal (Otto 1984:50)</li> <li>• Animals represented by teeth, vertebrae, ribs, scapula, pelvis, no limbs (Otto 1984:111)</li> <li>• Butchery through chopping</li> </ul>
Overseer	<ul style="list-style-type: none"> <li>• Refuse midden off of the detached kitchen (Otto 1984:103)</li> <li>• 50.9% unidentified mammal (Otto 1984:108)</li> <li>• Butchery through chopping</li> </ul>
Planter	<ul style="list-style-type: none"> <li>• Refuse midden behind the detached kitchen next to the swamp (Otto 1984:136–8)</li> <li>• 30.8% unidentified mammal (Otto 1984:143)</li> <li>• Butchery through sawing</li> </ul>

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1977: 82; Blumenschine 1988: 498; Blumenschine and Marean 1993: 282–289; Brain 1981: 18–23; Marean and Spencer 1991: 651–652; Marean et al. 1992: 106–111; Munson and Garniewicz 2003: 411–415).

At Cannon's Point, pre-depositional breakage by butchery is mentioned as sawing on bones from the planter site and chopping on those from the overseer and slave sites, but the proportions and locations are not reported to give a sense of how these butchery practices might have contributed to the high fragmentation (Otto 1984: 60, 111, 148). Otto (1984: 60, 111) interpreted the high degree of fragmentation, the high proportions of teeth and foot elements along with a lack of identifiable long bones, and chopping at the slave and overseer sites, as the result of a cuisine based on one-pot stews that could simmer for extended periods while attention was paid to other tasks. Instead, these patterns suggest that they could likely be the product of severe post-depositional damage that has been confused for evidence of human behavior.

Due to a fuller presentation of the findings at Monticello, the depositional contexts show clearer connections to bone condition. At Monticello, the Storehouse and Structure 'o,' along the slave-inhabited Mulberry Row, and the Dry Well behind the main house formed the basis for most of Crader's dietary interpretations. The bones from the Storehouse were recovered from a broadcast deposit found outside the door (Crader 1984: 543). The Dry Well bones were recovered from a deep, protected feature that was quickly filled with refuse after it was no longer used (Crader 1984: 549). The bones from Structure 'o,' which Crader (1990: 692, 700) interprets as a higher status slave

**Table 2. Summary of the faunal data from Monticello**

Tenancy	Placement and Contents
Storehouse	<ul style="list-style-type: none"> <li>• Broadcast out front door (Crader 1984:543)</li> <li>• 54.9% unidentified (Crader 1984:543; 1990:692)</li> <li>• 0.5% of NISP are sheep (Crader 1990:696)</li> </ul>
Structure 'o'	<ul style="list-style-type: none"> <li>• Broadcast deposit and root cellar, accumulated over 30 year period (Crader 1990:691–2)</li> <li>• 57.3% unidentified (small sample size) (Crader 1990:692)</li> <li>• 1.1% of NISP are sheep (Crader 1990:695)</li> </ul>
Dry Well	<ul style="list-style-type: none"> <li>• Deep, protected feature, short duration fill</li> <li>• 29.5% unidentified (Crader 1990:693)</li> <li>• 3.5% of NISP are sheep (Crader 1990:696)</li> </ul>

household, were recovered from both a protected root cellar and a broadcast deposit that could have accumulated over a 30 year period. Due to the combination of a surface deposit and a protected context at Structure 'o,' one could predict results somewhere between those from the Storehouse and the Dry Well. As shown in Table 2, the protected Dry Well shows significantly fewer unidentifiable bone fragments (29.5%) compared to the slave sites (Storehouse with 54.9%, Structure 'o' with 57.3%) which exhibit proportions more comparable to the broadcast deposits at Cannon's Point.

The proportion of bones identified to the species level is related to the degree of fragmentation, and sheep and pigs are highlighted at Monticello. Assuming that mutton or lamb was a more favorable meat, Crader uses proportions of identifiable sheep bones to infer status. The Storehouse has the fewest (0.5%, n = 8 bones), the Dry Well has the most (3.5%, n = 58 bones), and Structure 'o' is in the middle (1.1%, n = 44 bones) (Crader 1990: 695–696). Crader also uses skeletal element frequencies to infer status. Looking at pigs, which were the most common domestic mammal identified through bones at Monticello, the Storehouse is dominated by teeth and feet. Structure 'o' is also heavily represented by isolated teeth and feet, but meatier portions of limbs and vertebrae are represented. Structure 'o' also exhibits a very high number of limb bone midshaft fragments (Crader 1990: 697). The Dry Well shows a distribution of pig elements more like that expected of a complete pig carcass (Crader 1984: 551). Although the Storehouse is nearly devoid of and the other structures are deficient in limb bones, vertebrae, and ribs identifiable as pigs, a large number of these missing bones with a high proportion of limb bone midshaft fragments are identified to the *Artiodactyla* classification, a

less-diagnostic taxon that could be from sheep, pigs, or deer (Crader 1984: 545).

The interpretations of skeletal element frequencies for sheep and pigs were made without consideration of the bone fragments that were not identified to the species level. However, in view of the fact that these bone fragments were identified to *Artiodactyla*, or even those identified to a less specific taxon like *Ungulata* or *Mammalia*, they can be considered as contributors to the meat diet. This analytic approach would provide an important alternative to disregarding such bone fragments as part of an interpretation that there was limited access to the meatiest parts of animals. As could be predicted due to a mix of broadcast and feature deposits, Structure 'o' produced proportions of identifiable sheep and pig bones that fell between results from the Storehouse and the Dry Well.

The high numbers of unidentified fragments along with the high numbers of isolated teeth and undiagnostic limb bone midshaft fragments suggest that taphonomic processes may have influenced the final patterns at the slave sites, though these processes are not clearly discussed. Crader (1984: 548, 553) observes that carnivore chewing marks were present on 2.6% ( $n = 36$  bones) of the Storehouse sample, 3.3% ( $n = 130$  bones) in the Structure 'o' sample, and 2.1% ( $n = 35$  bones) of the Dry Well sample. This evidence indicates that scavenging dogs certainly altered the originally deposited assemblages and that the Dry Well was filled with bones that had originally been accessible to dogs. In several instances, Crader (1984: 544–547; 1990: 692–694, 709) also recognizes the surface deposit contexts at the Storehouse and Structure 'o' and she suggests that trampling may have affected the appearances of the samples. However, this taphonomic suggestion is downplayed in favor of a cultural explanation that the slaves chopped the bones into small fragments to extract grease in stews. Crader does not present quantifications of trampling damage or fracture patterns to identify the timing of bone breakage in order to infer how much surface exposure could have affected the samples. Investigations of weathering or fracture patterns can tell an analyst how much fragmentation occurred when the bones are fresh and how much occurred on the ground surface after the bones had undergone some decay (Behrensmeyer 1978; Brain 1981: 15; Haynes 1983; Morlan 1984). In view of the fact that the three sites are reported to have similar frequencies of carnivore chewing, prolonged surface exposure at the Storehouse and Structure 'o' seems to have had a major impact on the final appearance of the fauna samples.

Crader's slave stew interpretation is based on the fragmentation which

she attributed to severe chopping to reduce the bones to small sizes. Her data from the Storehouse shows a moderate amount of butchery marks (7.4%,  $n = 110$  specimens), but most of these marks (5.5%,  $n = 88$  specimens) are knife cut marks produced when meat was cut from the bone. Evidence for chopping is only identified as chop and sheer marks on about 2% of the collection or 29 individual bone fragments (Crader 1984: 547). There is little discussion about where the chop marks are located. In comparative faunal studies, chops are generally found in places that divide the carcass into manageable portions such as at joints (e.g., Heinrich 2010: 110–111, 142, 208; Landon 1996: 75, 76, 78, 86; Reitz 2007: 97–98), while chops to support Crader's conclusions should hypothetically be disproportionately numerous and found all over the bones in order to render them into small bits.

Taphonomic investigations can help explain how processes working in depositional contexts can produce faunal results like those seen at Cannon's Point, Monticello, and other faunal studies of slave diet (e.g., McKee 1999: 228–229; Thomas 1998: 542–543). While a large number of slave sites are represented by broadcast deposits around the living quarters that were likely subject to severe destructive processes, taphonomic studies of faunal collections from well-protected features can also be informative about human activity and depositional processes at the site. The Rich Neck site near Williamsburg, Virginia provided a very large faunal collection from numerous sub-floor pits within the slave quarters (Franklin 2004: 187). The results of the faunal analysis suggest that taphonomic processes did not play a significant role in modifying the deposited sample, in view of the fact that the meaty limbs are identified and a wide variety of small mammal and fish bones are present (Franklin 2001: 94). Despite this, questions about the depositional processes can be raised from some details in the reports.

First, over 25,000 bones fragments were excluded from the interpretations of the Rich Neck data due to the fact that they were only identifiable to the “indeterminate mammal” classification. These “indeterminate mammal” bones account for about 56% to 68% of the combined domestic and wild mammal bone samples for the four richest temporal phases identified at the Rich Neck site (Franklin 2004: Tables 8.2, 8.4–8.8). Major interpretations into the Rich Neck diets were based on allometric contributions of each animal through bone weights, and the omission of a significant proportion of the collection could have influenced the results. However, the impacts of such omissions were likely a minor issue at Rich Neck where the contrasts were mainly between cows and pigs instead of more similarly sized animals such as

sheep, deer, and pigs. While the use of bone weights to infer meat yields has its critiques (Casteel 1978; Jackson 1989), no explanation is provided for what rendered these bones to be unidentifiable to a useful taxon. Some unquantified evidence of dog chewing and weathering was found (Bowen and Atkins 2004: 296). This suggests that bones had been exposed on a ground surface before the residues were used to fill the sub-floor pits and reveals some information about waste disposal processes at the site.

Close reviews of the faunal assemblages from Cannon's Point, Monticello, and Rich Neck help to demonstrate that post-depositional processes had impacted the bone residues, which had subsequently influenced researcher interpretations. These assemblages also show that there are correlations between depositional environments and degrees of fragmentation and identifiability, where those bones deposited onto exposed ground surfaces exhibit greater degrees of fragmentation and unidentifiability than those dumped into protected contexts. During the 1980s, Cannon's Point and Monticello showed historical archaeologists that faunal remains can be used to explore diets and environmental exploitation by different social classes and that human-made butchery marks can potentially show different uses of meat between the social classes. Due to great advancements in taphonomic understanding, one can now offer additional refinements to this earlier research. Although many fragments were rendered unidentifiable to specific skeletal elements or the species level taxon, the bones that were originally argued to be lacking, such as the heavy meat-bearing long bones, are in fact present at these sites. Therefore, it should be considered that the underclass slaves (and the overseer at Cannon's Point) had access to those meatier parts of the animals, and the enslaved laborers at the Monticello Storehouse and Structure 'o' likely had greater access to supposedly higher status animals like sheep than previously believed. The presence of all body parts would then suggest that the slaves at these sites could have reared their own domestic stock or that they obtained the equivalent of full carcasses from their owners through provisions or theft.

The conclusions about meat preparation could also be refined after the close survey of the published research. These slave diet studies attempted to reconstruct folk lifeways which were passed orally and undocumented in texts such as diaries or cookery books. With consideration that there has been very little research undertaken into the empirical residues of stews (Church and Lyman 2003), one does not know how the faunal signature of stews should appear. If the high degrees of fragmentation can be better explained by post-depositional processes, the low frequencies of butchery evidence presented

from these sites suggest that carcasses were subdivided in standard patterns like those seen at the higher status and even other comparative sites with chopping or sawing being done to remove joints from the fuller carcass. In accordance, the knife processing identified by relatively low proportions of cut marks is proportional to those seen with the more affluent and comparative sites through the removal of masses of meat.

### **A Reanalysis of the Castle of Good Hope's Granary**

In 2005, a reanalysis of the faunal remains from the Granary (designated as site F2 by the excavators) in the Castle of Good Hope in Cape Town, South Africa was undertaken (Heinrich 2010; Heinrich and Schrire 2011). The significance of the Castle's Granary in South African historical archaeology is that the faunal and material residues recovered during excavation have been interpreted by Hall (1992: 389–390; 1999: 196; n.d.a) to represent slave occupation, subsistence, and resistance. The slave interpretation of the faunal assemblage was partly made due to similarities with the “slave pattern” identified in the research published from American plantation sites such as Cannon's Point and Monticello. At those slave sites in America, the presumably preferred and higher status meaty portions and tastier younger animals were under-represented, and the highly fragmented bones were viewed as indicative of traditional stews. The following reanalysis demonstrates how to better evaluate the data connecting the interpretations from Cannon's Point, Monticello, and the Granary through deep taphonomic investigations into post-depositional agents like scavengers and trampling, bone physics through breakage patterns, and related analytical methods.

The pentagonal stone Castle of Good Hope was constructed by the Dutch East India Company in 1666 in the face of increased military threats from European rivals as well as to replace the original mud fort which was in a state of decay. Military advisors believed the new Castle was vulnerable to cannon fire from the surrounding mountains, so a “Kat wall” was built diagonally through the courtyard between 1685 and 1691 to create two smaller, irregular inner and outer courtyards (Fitchett 1996: 144; Johnson-Barker 2003: 34, 64). This addition to the Castle provided space for more structures, which included a long vaulted grain storage room that was designed to be airtight and dry (Fitchett 1996: 163–164). The Castle was built on the sandy shore of Table Bay, and throughout its history the high water table and tides caused a nuisance inside and in front of the Castle. These water control challenges ulti-

mately forced the replacement of the original seaward-facing entrance with an entrance on the side of the Castle facing the growing city at the end of the seventeenth century (Hall 1989: 7; Fitchett 1996: 143–144). Saturated ground was also a continual problem inside the Castle and fills were repeatedly brought in to raise the ground level.

Excavators working within the Granary encountered dozens of discrete layers two meters deep that contained a mixture of highly fragmented pieces of ceramics, animal bones, and a large proportion of building rubble of a wide variety of materials. Archaeologists aggregated these discrete layers into seven temporal Phases that accumulated over a century of deposition. The lowest of these layers were deposited between the ground leveling for the Castle in 1666 before the Kat wall was built and the mid-eighteenth century when a wood floor was placed in the vault (Hall n.d.b). No documentary evidence indicated any human occupation in the Granary among the valuable official grain stores. Hall contended that enslaved laborers were very likely kept close by in dark corners of the Castle so they would be available to serve, instead of housing such slaves in the “Slave Lodge” located the equivalent of several city blocks away. Archaeologists’ field notes claim recovery of what were interpreted to be slave activity residues in the Granary. Small fragments of bone and porcelain were attributed to slave occupation, ash scatters were originally identified as *in situ* hearths, and small pits were originally equated to root cellar pits like those from slave quarters seen in places like Monticello (Hall n.d.b: 7–8; Gribble 1988: 35–36). After the slave interpretation was disseminated, additional experiences allowed the local archaeologists to reinterpret many of these features. The ash was later interpreted as residue from dumped braziers, and the small pits were reassessed as representing post holes for scaffolding to construct or repair the vaulted brick roof (David Halkett, 2002, pers. comm. to Carmel Schrire). Thus, these features are no longer interpreted as evidence of *in situ* habitation.

Francis Thakeray (1989) first analyzed the fauna from the Granary according to the individual Phases, but he ultimately lumped all seven Phases to make final conclusions. Such an analytic approach is immediately problematic since the deposits represent over a century of time and Phase 1 (c.1666–1685/1691) was deposited before the Kat wall and the Granary were constructed and therefore could not represent any occupation within the Granary. Thakeray’s conclusions are that sheep dominated through minimum numbers of individuals (MNI) and the sheep sample is dominated by teeth with some forelimb bones, while bones from the meaty hind limbs are nearly absent. He

contended that tastier, preferable juvenile sheep were under-represented. In doing so, he used the raw count of specimens (NISP) and did not take the staggered fusion stages of different bones into consideration when identifying animal ages. Thackeray reported that the skulls were qualitatively highly fragmented to extract the brains and that only a visually-estimated 1% of the bones were burnt, indicating stews like those from Monticello or Cannon's Point.

Continuing with the theme of context, the depositional history of the Granary must first be investigated. Field notes and site photographs show that the more discrete sediment layers are platy, parallel and slightly sub-parallel bedding planes, and they are generally of uniform thickness across their extents. These characteristics of the sediment layers suggest that they were deposited as efforts to raise the ground surface (Waters 1992: 34; illustrated in Heinrich 2010: Figure 5.2). Although the discrete stratigraphic layers often extended across broad lengths, they were lens-like in the sense that they were rarely continuous across the entire Granary structure. These characteristics further suggest that the units were deposited as intermittent fills. Stratigraphic breaks were clearly observable, where "abrupt contacts coincide with depositional bedding planes that formed as a result of changes in local depositional conditions" (Waters 1992: 70). This shows that the sediment layers were deposited and buried relatively quickly because they were not exposed long enough for characteristic gradated soil profiles to develop (Schiffer 1987: 200–201). Successive sediment layers were variable in thickness, inclusions, and color, indicating that these units were fills brought into the Granary from various sources, and they are not the result of continuous occupation of the structure. The need to keep the Granary dry would have been a priority since moisture would promote the decay of the valuable grains stored there, especially since the Granary is located near the beach-ward end of the Castle where the water table was repeatedly a problem.

For the reanalysis, Phase 1 was chosen since it was the earliest deposit within the Castle, and Phase 7 was chosen since Hall (n.d.b: 8; Gribble 1988: 35–36) explicitly interpreted it as the residues of *in situ* slave occupation. The analysis employed protocols demonstrated to help reliably identify taphonomic marks present on bone surfaces. Investigating bone surfaces under a raking light with a 10x-power hand lens allows for the identification of both conspicuous and inconspicuous marks that can be compared with marks produced through actualistic experiments (Blumenschine et al. 1996). Actualistic experiments work under the assumption of uniformitarian principles where tests are performed that can help provide direct, controlled observations of

taphonomic processes and the traces left on the bones. Many studies have described the importance of close investigations to identify taphonomic traces, generally with some magnification (e.g., Behrensmeyer et al. 1986; Binford 1981; Blumenschine 1995; Blumenschine and Marean 1993; Bunn 1981; Capaldo and Blumenschine 1994; Dominguez-Rodrigo and Piqueras 2003; Egeland et al. 2004; Fiorillo 1989; Fisher 1995; Potts and Shipman 1981; Selvaggio and Wilder 2001; Shipman 1981). Taphonomic traces created by natural or human agents are often inconspicuous and difficult to observe with the naked eye or under irregular lighting, which can lead to under-quantified assessments. In addition, close investigation is important to correctly identify the traces present since it is possible for several processes like knife cutting and trampling to produce superficially similar modifications to the bone surfaces. Standardization through a wider use of magnification under an angled light and recording of all trace marks will allow for stronger cross-context and inter-site comparisons.

Concerning bone condition, Figures 1a and 1b support Hall and Thackeray's assessment that the Granary bones are highly fragmented, and they are among the smallest average bone fragment sizes when compared to other seventeenth and eighteenth century sites around the Western Cape of South Africa. Both size 2 (sheep or pig-sized mammals) and size 3 (cow-sized mammals) bones were impacted by severe fragmentation suggesting that both mammal size classes and both Phases a century apart had similar taphonomic histories. In the following discussion, C. K. Brain's (1981) standardization of mammal size classes will be used to refer to less specific taxa. His categories help infer that all taxa within their respective size class will have comparably sized bones in regard to gross dimensions and cortical thicknesses. Within this classification, size 1a mammals are the smallest and include animals such as small rodents, and size 1b are others that weigh up to about 50 pounds, such as cats, dogs, and the smallest wild South African bovids such as the grysbok (*Silvicapra grimmia*) and the steenbok (*Raphicerus campestris*) that are mentioned below. Size 2 mammals generally have live-weights from about 50 to 250 pounds and can be illustrated by mammals comparable in size to sheep, pigs, and white-tailed deer. Size 3 mammals have live-weights from 250 to 750 pounds and can be illustrated by domestic cows and horses.

The close investigations under magnification were performed in order to determine the causes of the fragmentation. Figure 2 shows that carnivores were moderate actors in the fragmentation of the bones, especially the more manageable size 2 mammal long bones. Domestic dogs target the greasy epiphyseal

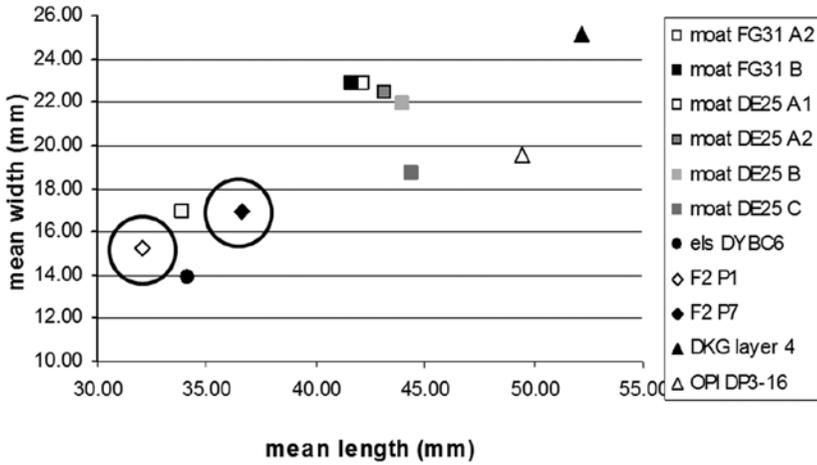


Figure 1a. Mean measures of size 2 bone fragments from the Granary (F2) and how they compare to other late seventeenth and eighteenth century archaeological sites around the Cape. Phases 1 and 7 from the Granary (F2) are circled.

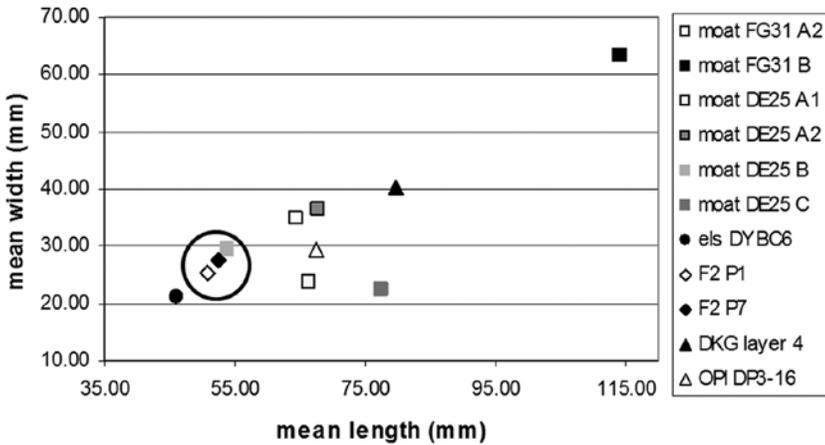
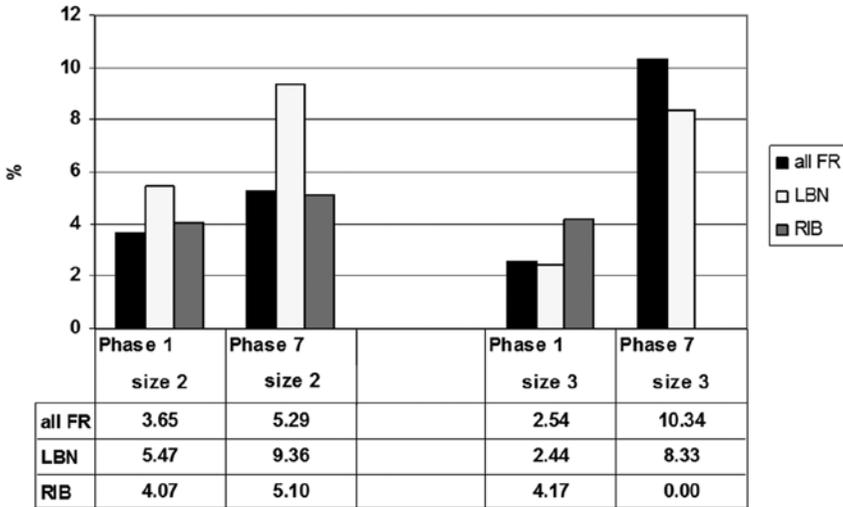


Figure 1a. Mean measures of size 3 bone fragments from the Granary (F2) and how they compare to other late seventeenth and eighteenth century archaeological sites around the Cape. Phases 1 and 7 from the Granary (F2) are circled.

ends to get to the marrow and they can easily break a sheep-sized limb bone to smaller splinters. Softer bone types such as vertebrae and pelvises may have been chewed as frequently as the long bones, but a greater proportion could have been completely consumed and eliminated from the deposit.

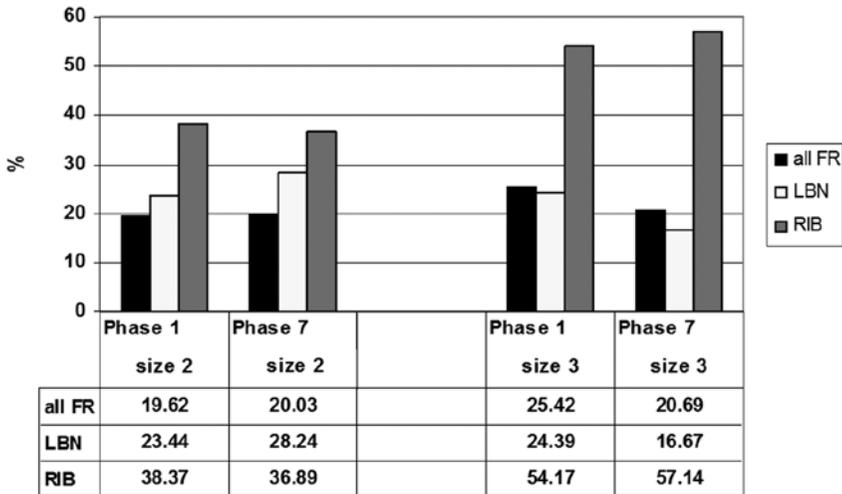
Abrasion damage identified by faint, sub-parallel striations was present



**Figure 2.** Frequencies (% of NISP) of carnivore damage observed on bone surfaces. Frequencies for all fragments (FR), long bones (LBN), and ribs (RIB) are shown.

on very large proportions of the bone fragments ranging from nearly 20% to above 50% of them, depending on the mammalian size class category (Figure 3). Figure 3 also shows abrasion mark frequencies broken down by the bone categories of long bones and ribs to show that the smoother surfaced dense portions of bones exhibit greater proportions of marks. The fills within the Granary contained potentially abrasive inclusions such as bricks, mortar, and stone. If abrasion or crushing by the building materials caused any fragmentation within the fills, refitting of some fragments should have been possible. Since no refits were possible, this high amount of abrasion damage suggests that the bones were left exposed on a heavily trafficked ground surface before being moved as fills.

Table 3 presents additional measures that describe the fragmentation of the Granary bones. These measures are often associated with carnivore scavenging where long bone shafts, which resemble cylinders with a marrow cavity, are crushed and the grease-laden epiphyses are chewed for nutrients. Equally as probable, this fragmentation can occur through trampling. The shafts can be crushed underfoot and the epiphyses obliterated because they are the softest, least dense portions of the bones. In Table 3 one can see that long bone cylinders are not well-preserved where values closer to 1.00 (100%) are indicative of complete shafts. Shaft to epiphysis fragment ratios are also indicative of



**Figure 3.** Frequencies (% of NISP) of abrasion damage observed on bone surfaces. Frequencies for all fragments (FR), long bones (LBN), and ribs (RIB) are shown.

long bone completeness, where ratios closer to 1:1 indicate fully preserved, complete bones. The values for both Phases show that the long bones are heavily broken and the soft portions were eliminated from the deposits, which can have significant implications for an analysis. Articular ends are the most taxonomically diagnostic parts of the bones and epiphyseal fusion can reveal ages when animals were slaughtered. Soft epiphyseal ends lost through taphonomic processes would result in an artificial over-representation of adult specimens, leading to interpretations that people predominately ate older animals.

Bone physics can tell us the timing of bone fragmentation. Fresh bones contain elastic, organic collagen, which will cause those with thick cortical bone, such as long bone shafts, to break in smooth, spiral or oblique patterns, similar to the conchoidal fractures of a fine grain stone. As cortical bone decays and dries out, the collagen is lost, leaving behind the brittle, inorganic, calcium-rich hydroxyapatite that will fracture in squared off, transverse, and stepped patterns (Brain 1981: 15; Haynes 1983: 111–113; Johnson 1985: 160; Lyman 1994: 318–324; Marshall 1989: 11–16; Morlan 1984: 161–165; Myers et al. 1980: 487–488).

As shown in Table 4, moderate proportions (14.82% in each Phase) of the long bones from both Phases were fragmented after the bones had

**Table 3.** Measures of long bone fragmentation and epiphyseal elimination.

		long bone shaft circumference	epiphysis fragments (n)	shaft fragments (n)	ratio (shaft: epiphysis)
size 2 mammal	Phase 1	0.21	31	218	7.03
	Phase 7	0.26	59	536	9.08
size 3 mammal	Phase 1	0.17	4	37	9.25
	Phase 7	0.19	1	11	11.00

undergone the decay of their organic collagen. Since no refits were able to be made between fragments, these dry breaks likely did not occur while within the Granary deposits, particularly in view of the fact that buried bones rarely undergo additional weathering (Behrensmeier 1978: 154). From Table 4, one can note that over 70% of the long bones from each Phase exhibit fresh breakage patterns. While fresh breakage is the predominant pattern, the quantities mirror a comparably diminished frequency observed in another Cape site's surface-deposited fauna that revealed heavy taphonomic traces and comparable fragment sizes (Elsenburg, noted as "els DYBC6" in Figures 1a and 1b). Additionally, these diminished frequencies at the Granary strongly contrast to sites where bones were buried quickly and protected from taphonomic damage; the protected contexts repeatedly exhibit less than 5% dry breaks (Heinrich 2010: 196, 286). While fresh breakage is predominant, it does not prove that breakage was fully by human butchery. Scavenging carnivores target the grease, scraps, and marrow from fresh, not dry, bones and trampling can similarly fragment fresh as well as dry bones.

Putting these various lines of evidence together, the stratigraphic details, moderate proportions of dry bone breakage, heavy abrasion and carnivore damage, tell an analyst that the bones were lying on a ground surface for a lengthy period of time outside of the Granary before they were ultimately brought into the vault by being incorporated in the fills. If the bones were brought into the Granary as part of fills, they cannot be the residues of *in situ* occupation within the Granary, but instead they could be residues of other behaviors from within the Castle such as the garrison's or Company officials' diets.

Analytical methodologies also played a role in the "slave pattern" interpretation of the Granary fauna. Zooarchaeology is a challenging discipline partly due to the in-depth skeletal knowledge needed to identify the bones and their fragments, as well as the ability to identify the animal from which

**Table 4.** Frequencies of long bone shaft breakage in Phase 1 and Phase 7 for size 2 and size 3 mammals. Dry bone breakage is highlighted in bold.

Breakage type	Phase 1		Phase 7	
	n	%	n	%
indeterminate	32	10.77	90	14.49
<b>oblique, transverse &amp; stepped</b>	<b>0</b>	<b>0.00</b>	<b>0</b>	<b>0.00</b>
bone flake (oblique)	6	2.02	0	0.00
<b>transverse &amp; stepped</b>	<b>0</b>	<b>0.00</b>	<b>0</b>	<b>0.00</b>
<b>oblique &amp; stepped</b>	<b>3</b>	<b>1.01</b>	<b>1</b>	<b>0.16</b>
<b>oblique &amp; transverse</b>	<b>6</b>	<b>2.02</b>	<b>7</b>	<b>1.13</b>
<b>stepped</b>	<b>10</b>	<b>3.38</b>	<b>5</b>	<b>0.81</b>
<b>transverse</b>	<b>25</b>	<b>8.41</b>	<b>79</b>	<b>12.72</b>
oblique	215	72.39	439	70.69
TOTAL	297	100.00	621	100.00

they came. In addition to identification abilities, methods of quantification can produce variable results. Tables 5 and 6 present MNI counts which differ between the Thackeray (1989) analysis and the reanalysis presented in this article. Some of the differences are related to taxonomic identification issues such as the additional pigs, wild bovids, and tortoises found in the reanalysis. Other differences are due to quantifications, such as Thackeray not considering staggered bone epiphyseal fusion stages when calculating MNIs for cows and sheep. Unlike Cannon's Point, Monticello, or Rich Neck, the species ratios or biomass contributions of sheep, cattle, pig, and wild fauna were not the basis for a slave diet interpretation at the Cape site.

Some animals overlooked in Thackeray's analysis are notable. The wild bovids, the grey duiker (*Silvicapra grimmia*), the steenbok (*Raphicerus campestris*), and possibly also the porcupine (*Hystrix africae-australis*), hold significance because early legislation outlawed the hunting of these wild animals due to their increasing rarity on the landscape (Table 6). Officially licensed hunters did collect wild animals for the Governor who presented them at official dinners to display the exotic South African fauna (Cruz-Uribe and Schrire 1991: 95; Mentzel 1925: 101). The restricted access to these animals would have made them improbable slave rations, and enslaved laborers would not have been able to hunt for them in the urban center. A more probable explanation would be that residues from official dinners were incorporated into the Granary as part of the fills.

**Table 5.** Taxonomic representations for Phase 1 and Phase 7 according to Thackeray (1989).

	Phase 1	Phase 7
cow, adult	1	2
cow, juvenile	1	0
sheep, adult	3	3
sheep, juvenile	1	2
pig	0	1
indeterminate rabbit	1	0
small bovid	1	0
rodent	1	1
tortoise	0	0
TOTAL	9	9

Hall (1999: 196; n.d.a) and Thackeray (1989) determined skeletal part frequencies from bones only quantified through the NISP of fragments identified as sheep, which caused them to conclude that the Granary inhabitants only had access to the poorer portions of the animals. First, the problem of measuring taxonomic or skeletal element abundance through NISP quantifications does not account for the possibility that certain bones could create more fragments than others (Marshall and Pilgram 1993). Second, by only using bones identified to the species taxon, an analyst potentially omits significant parts of the collection like the analyses done for Cannon's Point, Monticello, and Rich Neck. The situation at the Cape has only one size 2 bovid, the sheep, which was exploited by the colonists, and in the Granary size 2 bovid bone fragments make up a large proportion of the samples (see Table 6,  $n = 289$ , 31.21% for Phase 1 and  $n = 826$ , 38.10% for Phase 7).

In view of the fact that there was only one exploited size 2 bovid, the bone fragments identifiable to sheep as well as size 2 bovids (assuming that they are sheep) were aggregated for the reanalysis. The small wild bovids identified at historic Cape sites, such as the steenbok and grysbok, are size 1b with significantly smaller bone sizes and they are therefore not confusable with sheep. Bone fragments that were only identifiable as size 2 Artiodactyla or Mammalia, which could be either sheep or pig, were not aggregated. When the fragments of size 2 bovids are counted along with sheep, those skeletal parts, particularly the meaty limb and vertebral elements that Hall and Thackeray claimed were not present, are surely present and numerous through NISP calculations (Tables 7a-c). A survey of all elements suggests that nearly full car-

**Table 6.** Taxonomic representations for the reanalysis of Phase 1 and Phase 7.

Taxon	Phase 1		Phase 7	
	NISP	MNI	NISP	MNI
<i>Bos taurus</i> , cow	28	1	8	1
<i>Ovis aries</i> , sheep	175	5	497	7
<i>Sus scrofa</i> , pig	8	1	13	1
Lagomorpha sp., rabbit	1	1	1	1
<i>Sylvicapra grimmia</i> , grey duiker			3	1
<i>Raphicerus campestris</i> , steenbok	3	1	1	1
<i>Hystrix africae-australis</i> , porcupine	6	1		
<i>Felis catus</i> , domestic cat			15	1
indeterminate carnivore	1	1	1	1
indeterminate mammal 1a			1	1
indeterminate mammal 1b			1	1
indeterminate mammal 2	142	1	393	1
indeterminate mammal 3	19	1	2	1
artiodactyla 2	158	1	350	1
indeterminate bovid 1a			2	2
indeterminate bovid 1b	4	1	28	1
indeterminate bovid 2	289	1	826	1
indeterminate bovid 3	78	1	21	1
<i>Chersina angulata</i> , angulate tortoise	14	1	2	1
<i>Gallus gallus</i> , chicken			1	1
indeterminate bird			1	1
TOTAL	926	18	2168	27

casses are represented in the Granary fills with the exception of feet (Table 7c) which are rare in the other contemporary Cape sites due to the bones often being removed with hides for the tanning industry (Heinrich 2010: 107, 140, 205). By aggregating the two taxa, the dominance of diagnostic teeth and foot elements is diminished, while the meatiest portions of the carcass are now well-represented through NISP, and this illustrates the importance of not disregarding significant proportions of the collection.

Lastly, on the subject of food preparation, the visually estimated low number of burned bones and the high degree of smashing were originally used as evidence of stews. When the incidence of charring and burning is quantified for Phase 7, which Hall (n.d.b.: 7) explicitly interpreted as slave activity

**Table 7a.** Cranial and axial skeletal part frequencies of sheep + size 2 bovids by NISP and compared to Thackeray's (1989) sheep-only results for all seven Phases aggregated. Arrows indicate direction of percentage change from Thackeray's results; NC indicates no change.

Skeletal element	Phase 1			Phase 7			Thackeray All Phases	
	NISP	%	Δ	NISP	%	Δ	NISP	%
lower premolars	10	4.2	▼	23	2.8	▼	72	6.4
lower molars	10	4.2	▼	23	2.8	▼	93	8.2
upper premolars	3	1.3	▼	6	0.7	▼	54	4.8
upper molars	4	1.7	▼	7	0.9	▼	80	7.1
incisors	7	2.9	▼	26	3.2	▼	75	6.6
mandible	20	8.4	▲	23	2.8	▲	5	0.4
maxilla	2	0.8	▲	4	0.5	▲	1	0.1
occipital	0	0.0	▼	4	0.5	▼	11	1.0
temporal <sup>a</sup>	2			4				
frontal <sup>a</sup>	2			4				
premaxilla <sup>a</sup>	0			5				
indeterminate vault <sup>a</sup>	8			12				
parietal <sup>a</sup>	1			4				
horncore <sup>a</sup>	2			2				
hyoid <sup>a</sup>	1			2				
zygomatic <sup>a</sup>	1			3				
atlas vertebrae	3	1.3	▲	3	0.4	NC	5	0.4
axis vertebrae	3	1.3	▲	2	0.2	▼	8	0.7
cervical vertebrae	12	5.0	▲	55	6.7	▲	24	2.1
thoracic vertebrae	19	8.0	▼	120	14.7	▲	105	9.3
lumbar vertebrae	20	8.4	▲	115	14.0	▲	42	3.7
sacral vertebrae <sup>a</sup>	2			9				
caudal vertebrae	6	2.5	▼	21	2.6	▼	35	3.1
proximal ribs	23	9.7	▼	98	12.0	▼	193	17.1

<sup>a</sup>These fragments were not reported by Thackeray and therefore they are not included in the reanalysis percentage calculations.

residues, the proportion of burned bones is moderate ( $n = 121$ , 5.80%) and comparable to other Cape sites where roasted meat was part of the cuisine (Heinrich 2010: 143, 163, 209). Additionally, chop marks are moderately represented ( $n = 71$ , 8.04% for Phase 1 and  $n = 289$ , 13.85% for Phase 7) and they are found at predictable locales such as at joints and along the vertebral column

**Table 7b.** Limb skeletal part frequencies of sheep + size 2 bovids by NISP and compared to Thackeray's (1989) sheep-only results for all seven Phases aggregated. Arrows indicate direction of percentage change from Thackeray's results.

Skeletal element	Phase 1			Phase 7			Thackeray All Phases	
	NISP	%	Δ	NISP	%	Δ	NISP	%
scapula	19	8.0	▲	43	5.3	▲	27	2.4
proximal humerus	0	0.0	▼	10	1.2	▲	2	0.2
midshaft humerus <sup>a</sup>	10			19				
distal humerus	8	3.4	▲	11	1.3	▼	18	1.6
proximal radius	5	2.1	▲	13	1.6	▲	16	1.4
midshaft radius <sup>a</sup>	4			19				
distal radius	2	0.8	▼	12	1.5	▼	29	2.6
proximal ulna	5	2.1	▲	7	0.9	▼	14	1.2
midshaft ulna <sup>a</sup>	0			0				
distal ulna	2	0.8	▲	7	0.9	▲	0	0.0
proximal femur	4	1.7	▲	25	3.1	▲	17	1.5
midshaft femur <sup>a</sup>	10			33				
distal femur	3	1.3	...	24	2.9	▲	9	0.8
proximal tibia	3	1.3	▲	20	2.4	▲	3	0.3
midshaft tibia <sup>a</sup>	2			0				
distal tibia	6	2.5	▲	27	3.3	▲	18	1.6

<sup>a</sup>These fragments were not reported by Thackeray and therefore they are not included in the reanalysis percentage calculations.

where carcasses could be divided into manageable portions. Chop marks were not present in random locations as one may hypothesize if bones were smashed through chopping for stews (Heinrich 2010: 163). While close investigations of taphonomic traces were performed in this reanalysis, attention was also focused on identifying any other butchery marks that could have contributed to fragmentation, such as those made by hammerstones or other impact tools. No other methods of human butchery were in evidence through traces on the bone surfaces.

Although the data strongly points to the Granary faunal samples not deriving from *in situ* occupation, where they are instead derived from episodic fills from outside the Granary, the faunal evidence from this site still holds considerable value for South African historical archaeology. Elaborated more fully elsewhere within its historical and geographical contexts (Heinrich

**Table 7c.** Distal limb and foot skeletal part frequencies of sheep + size 2 bovids by NISP and compared to Thackeray's (1989) sheep-only results for all seven Phases aggregated. Arrows indicate direction of percentage change from Thackeray's results; NC indicates no change.

Skeletal element	Phase 1			Phase 7			Thackeray All Phases		
	NISP	%	Δ	NISP	%	Δ	NISP	%	
proximal metacarpal		0	0.0	▼	2	0.2	▼	8	0.7
midshaft metacarpal <sup>a</sup>	1				0				
distal metacarpal		1	0.4	▲	0	0.0	▼	2	0.2
proximal metatarsal		2	0.8	▲	4	0.5	▲	3	0.3
midshaft metatarsal <sup>a</sup>	1				7				
distal metatarsal		3	1.3	▲	2	0.2	▲	1	0.1
proximal metapodial		0	0.0	▼	0	0.0	▼	1	0.1
midshaft metapodial <sup>a</sup>	1				0				
distal metapodial		2	0.8	▼	4	0.5	▼	15	1.3
indeterminate long bone fragment <sup>a</sup>	168				348				
1st phalange		1	0.4	▼	5	0.6	▼	10	0.9
2nd phalange		2	0.8	▲	5	0.6	NC	7	0.6
3rd phalange		1	0.4	▼	4	0.5	▼	7	0.6
pelvis		7	2.9	▲	20	2.4	▲	25	2.2
carpals/tarsals		16	6.7	▲	20	2.4	▼	48	4.2
sesamoids		0	0.0	▼	3	0.4	▲	2	0.2
patella		1	0.4	▼	3	0.4	▼	10	0.9
astragalus		3	1.3	▼	11	1.3	▼	20	1.8
calcaneus		0	0.0	▼	7	0.9	▼	16	1.4

<sup>a</sup>These fragments were not reported by Thackeray and therefore they are not included in the reanalysis percentage calculations.

2010; Heinrich and Schrire 2012), the animals that ultimately ended up in the Granary fills were raised within the wider colonial meat industry. Phase 1 is a rare seventeenth century urban sample which provides complementary information about how the Dutch East India Company struggled to develop their meat supply in the face of high demands from trade ship provisioning and the local markets. Phase 7 provides information about the meat industry at its peak in the mid-eighteenth century, when prime aged males were being sent to urban centers (Heinrich 2010: 288).

## Conclusions

The Granary assemblages were originally interpreted as presenting a “slave pattern” such as that established at Cannon’s Point and Monticello of limited access to meaty parts, older animals, and severe smashing to extract grease in stews. Through deeper investigations with the benefits of a wide array of current taphonomic research, it can be shown that this “slave pattern” is more likely a product of the analytical methodologies employed in those initial interpretations. A lesson that one must take from the Granary reanalysis is that deposited bones were rarely finished undergoing modification after the meal was eaten. A variety of destructive processes can alter bones so that they are less reflective of the remains that were originally deposited. When a faunal collection has experienced these modifying processes, as the Granary reanalysis illustrates, these processes can be investigated to more fully understand the collection’s depositional history. Also significant, the Granary demonstrates that one should not ignore portions of the samples that still hold valuable information that may not be as obvious as that which can be obtained from the more diagnostic bones or that which may be contrary to initial hypotheses. This critique is not intended to call for the discard of the accumulated body of historic-period or slave diet research which has provided very valuable information about diet, animal husbandry, and environment exploitation. And, unlike the fills of the Granary presented here, one should not deny that the bones scattered around a slave’s cabin are the residues of their food, but one should be skeptical that an analysis ignoring the taphonomic history of the sample is really reconstructing the stories that these bones can convey.

The fields of zooarchaeology and actualistic investigations into taphonomic agents were just beginning to mature in the 1970s and 1980s when the analyses at Cannon’s Point and Monticello were conducted. As one can recognize with the works cited here, taphonomic research has expanded and provided the discipline with solid findings applicable to the study of archaeological bone of all time periods. Diane Gifford-Gonzalez cites approximately 250 works in 1999 which was even then a limited fraction. Although faunal studies from other time periods have benefitted from this research, David Landon (2005: 5–6) notes, “historical zooarchaeologists have failed to keep up with other zooarchaeologists” as taphonomic research has advanced. Landon (2005: 5–6) further observes that any “interpretations of animal bone assemblages that ignore the effects of taphonomic processes on assemblage patterning must be considered incomplete.” The purpose of this article is not to

just point out the incompleteness or the misinterpretations of some previous slave diet research, but to provide avenues to refine and advance the science. My aim has been to provide an explicit example through the Castle of Good Hope's Granary of how taphonomic research can be applied to historic-period research and how understanding post-depositional processes can allow for a more refined and accurate analysis of the faunal remains and a foundation for evaluating past research.

Whenever the "current state" of an archaeological discipline is assessed, an author infers how much additional time it would take new practitioners to read the latest volume of research (Grayson 1984: 1–2; Landon 2005: 2–5), and this has certainly been true of the ever-increasing volume of taphonomic studies (Gifford-Gonzalez 1999: 55–56, Figures 2–7; Lyman 1994: 12–33). The need for familiarity with the growing body of zooarchaeological and taphonomic research will motivate historical archaeologists to play some catch-up. Following principles of uniformitarianism, actualistic research into bone biology, carnivore damage, trampling, weathering, cooking, and butchery can be easily translated to the historic period, in addition to opening avenues for historic period-specific taphonomic research on topics such as preserving or cooking methods (Landon 2005: 25). Future avenues of research are still wide open in the field of historical zooarchaeology. A more sound methodology that incorporates understanding and investigations into modifying processes is needed, and then research into diet and other human uses of animals can be more valuable on a comparative level.

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