

Chapter Thirteen

Preliminary Faunal Analysis of 18CH621

MARK R. KOPPEL AND ALLISON ALEXANDER

The Westwood Manor archaeological site (18CH621) contains an abundance of artifacts. In addition a large amount of animal bone was recovered along with the more diagnostic ceramics, pipes, and glass. This assemblage of faunal remains can reveal much about the diet of the inhabitants of 18CH621 as well as hunting practices and pastoral activities. The faunal remains can also provide insight about the economic status of the residents of 18CH621.

The preceding chapters suggest that the Westwood Manor site was occupied from the late 1670s until 1715, although the site does not appear to have been intensively occupied after c. 1700. The site is presumed to be the location of a very wealthy household, and may have served non-residential uses as well. 18CH621 was uncovered by homeowners Sandra and Phillip Harrison in 1996 while constructing a new house. They uncovered a cellar and what may have been a trash pit. The Harrisons divided the artifacts into lots based on location within these two features. Lots 1-6 are from the Cellar Area, Lot 7 is from a location outside of the cellar, and Lot 8 is from the Garden Area. Only Lots 2, 4, 5, 6, 7, 8, and 9 contain faunal remains.

Methods

The artifacts recovered from 18CH621 were processed by the Archaeology Practicum class at St. Mary's College of Maryland. Lots were divided between groups of students, who then washed, labeled, bagged, and cataloged the artifacts. Bone was not labeled or cataloged in much detail. Instead, each group split the bones in their Lot, using their own discretion to combine like with like, and then giving the count and combined weight of each new grouping. The students, having little or no prior experience with faunal analysis, grouped based on obvious commonalities, such as long bones, ribs, teeth, and obvious fish or bird. They also tried to separate between small and large-medium bones. After recording and bagging, the bones were placed back within their respective lots.

We chose to focus on the animal bone recovered from Westwood Manor for our major project. With the assistance and advice of zooarchaeologists Ed Otter and Henry Miller, we began to compile a more detailed catalog of the bone within the collection. Each previously cataloged lot containing bone was reopened, with each bone now examined individually. Bone was then divided once again based on commonality, but this time on a more precise level. Each bone was placed in record: Class, Family, Genus/Species, Number, Side (Left or Right), Element (Type of Bone), Portion (Part of Bone), and Weight. Any distinguishing features, such as burning, gnawing, or butchering, were also noted. The new catalog differed from the previous in the level of detail in identification. While the groups each divided and identified their bone slightly differently, the two students, with the aid of professional zooarchaeologists, were soon better able to differentiate between bones (though only to an extent).

This method of cataloging has the advantage of showing a gradient of detail. Even the most poorly identifiable bone can usually be identified as mammal, fish, bird, or reptile. Following that, some bone can be identified only by size (such as large, medium, or small mammal), while some can be further identified as, for example, carnivore or herbivore. The finest level of detail is to species, such as cow or sheep. Meanwhile, the bone itself can be identified

(such as rib, scapula, femur, etc.), hopefully distinguishing between left and right side of animal (or in the case of quadrupeds, front or back). The biggest advantage of this system is that it still allows for certain degrees of identification, regardless of the skill of the researcher. Of course, it goes without saying that training and experience will grant the greatest level of detail, but even the least experienced can usually distinguish between mammal, bird, or fish.

The bone condition within the assemblage itself varied a great amount. Nearly all the bones were fragmented in some way, with the notable exceptions of an intact cattle metapodial and several of the smaller mammal and bird bones. Some bones seemed to otherwise be in perfect condition, while many others were worn and weathered. Some bones had been burned to varying degrees, while the whiter shading of others implied they had been exposed to sunlight longer. Several bones had rust, or copper staining, from where they had lain against a metal artifact. Some bone was extremely dense, while other fragments were soft enough to crumble in the hand.

Data

The detailed catalog recorded Lots 1, 4, 5, 6, 7, 8, and 9. Approximately 1,156 bones and bone fragments in total were counted. The cellar fill contained around 775 of these, while the refuse-filled pit in the garden contained the remaining 381. Mammal bone was the most common, followed by Fish, then Bird, and finally Reptile/Amphibian.

| | Cellar | | Garden | | Total | |
|---------|--------|------|--------|------|-------|-------|
| | N | % | N | % | | |
| Mammal | 721 | 92.6 | 251 | 65.9 | 972 | 84.1 |
| Bird | 22 | 2.8 | 20 | 5.2 | 42 | 3.6 |
| Fish | 28 | 3.9 | 106 | 27.7 | 134 | 11.6 |
| Reptile | 4 | 0.5 | 4 | 1.0 | 8 | 0.7 |
| Total | 775 | 99.8 | 381 | 99.8 | 1156 | 100.1 |

As can be seen in Table 2, nearly the entirety of the Cellar samples consisted of Mammal bone, while within the Garden, mammal bone only forms approximately two-thirds of the sample. Fish samples are much more abundant in the Garden sample, while Bird and Reptile remain much the same.

Table 6 provides a closer look at the largest group, Mammals. It reveals that six species were identified, including Cow, Sheep/Goat, Pig, Dog/Wolf, Squirrel, Raccoon, and Rat. All other bone was put into a size category if at all possible (Large, Large-Medium, Medium, Medium-Small, Small). The rest (mostly shards, chips, and fragments) was cataloged as Unidentified Mammal. It is likely that the “Large” category consists mostly of Cattle bones, but this is not an assumption. The bone elements were mostly limb, scapula, or jaw fragments, with a scattering of ribs, vertebrae, and toes.

Of the Bird species, only two were identified: Chicken and Pigeon. Chicken was common (15 fragments identified), while the single Pigeon fragment was only identified with the aid of a comparative collection and a professional zooarchaeologist. The remainder is unidentified,

possibly being waterfowl or more chicken. The most common bones were limbs and sternum. Of special interest is a recovered bit of eggshell, likely from a chicken.

Fish occupied a significant portion of the collection. Only two species were identified positively, Catfish and White Perch, but the size and species of many of the fragments indicate very large fish, such as Sea Trout, Rockfish, Striped Bass, or possibly even Sheepshead. As Table 5 shows, the majority of identifiable fish fragments were found in the Garden Site, but those are mostly small items like scales, spines, ribs, and other assorted light bones. The bones found in the Cellar site are much larger, mostly from the head of the fish.

| | Cellar | Garden | Total |
|-----------|--------|--------|-------|
| Cow | 167 | 17 | 184 |
| Sheep | 25 | 7 | 32 |
| Pig | 58 | 21 | 79 |
| Carnivore | 1 | 1 | 2 |
| Squirrel | 1 | 0 | 1 |
| Raccoon | 2 | 0 | 2 |
| Rat | 1 | 0 | 1 |
| Large | 43 | 2 | 45 |
| Large-Med | 123 | 5 | 128 |
| Medium | 25 | 1 | 26 |
| Med-Small | 75 | 21 | 96 |
| Small | 26 | 9 | 35 |
| Unknown | 166 | 172 | 338 |

The Reptile and Amphibian bone was almost entirely Turtle. Two elements were identified as Box Turtle, while the others remain unclear as exact species. Some bones appear to be from larger turtles, perhaps Snappers, but identification remains unclear. Only one bone was listed as “unknown Reptile,” but it is quite possible that other bones were misidentified as small mammal. Shell, limb, and hip bones showed up most frequently in this admittedly small sample.

Analysis

The assemblage shows many signs of human interaction. The bones of the domesticated mammals show signs of butchering and consumption. None of the butcher marks showed indications of being machine-sawed. Saw marks were noted on many (12+) bones, and more may have escaped notice. Burning or burn marks were seen on several bones, probably occurring during preparation for eating. Cut marks (finer than butcher marks) appear on several bones, including fish. This is indicative of the consumptive stage, rather than the preparatory one. One cow phalange even showed possible signs of being cooked with the hoof forcibly removed, a rare practice. Long bones were often shattered by the proximal or distal shafts, a common way to reach the marrow inside. Very few bones showed “stress” fractures on the central shaft, which are more indicative of being trodden upon.²⁵³ There is almost certainly human selection in the type of bones found: no intact skeletons were excavated.

However, humans are not the only ones to have interacted with these faunal remains. Several bones have clearly been gnawed, and several scavengers appear within the assemblage itself. While it is possible that some, like the Raccoon, may have been caught and killed for food, others, like the Rat, probably took advantage of any flesh still on the discarded bones. It is unclear how much scavenging occurred when the site was an enclosed cellar, and how much occurred later when it was possibly an open pit.

The great majority of bones are cattle, and the number increases even further if one factors in the “large unidentified bone,” which is likely cattle. Pig was also common, more so

²⁵³ Simon J. M. Davis, *The Archaeology of Animals* (London, Yale University Press, 1987), p. 26.

than cattle in the smaller Garden site (see Table 6). Fish formed a large sample in terms of numbers, but not in size (though as mentioned before, several of the fish appear to be very large). Sheep appeared common during cataloging, but numerical analysis suggests that was illusory. Deer are absent, although samples could be hiding within “Medium Mammal” or masquerading as Sheep. However, it is almost certain that no Deer teeth appear among the many jaw and tooth samples.

Of the jaw and tooth specimens, most were identified as either Sheep or Pig, with few Cow teeth. Several smaller species were represented as well, including Raccoon and Dog/Wolf.

Scapulae were almost entirely Pig, Sheep, and Cow (with the possibility of Deer). Limbs were also of these three Mammals, as were the large number of ribs. It should be noted that several bags of “flat fragments” existed that the students could not tell whether they were rib or vertebrae fragments.

Fish

White Perch is a fish that is not very large, usually between 7 and 10 inches in length and weighing from 8 ounces to 1 pound.²⁵⁴ White perch are abundant in Maryland and are commonly found in the Potomac River. They are semi-anadromous, meaning they migrate to tidal fresh and slightly brackish waters to spawn in the spring.²⁵⁵ They favor brackish waters and can also be found in fresh water bodies. The Potomac River at that time was the right environment for these fish and continues to be so.

The finding of white perch scales and bones in this collection indicates the level of fishing skills that the fishermen in the area of that time had. White perch is a difficult fish to catch. They put up a fight for their size. Also, the white perch has a very hard and scaly body and sharp fins. Each of these things contributes to the difficulty level of catching the white perch.²⁵⁶

Catfish were also found in the collection. The most prevalent species of catfish in the Potomac River today is the Blue Catfish, a species that was not introduced into the Potomac River until the late 19th century. Similarly, channel catfish and white catfish were introduced into the Potomac River around the same time as the blue catfish, in the late 19th century.²⁵⁷ The Westwood Manor specimens are most likely brown bullhead catfish, a species of catfish that has been prevalent in North America for hundreds of years. They were commonly eaten in our time period by both Native Americans and Europeans.²⁵⁸

We identified two of them as Sheepshead fish and Black Drum fish. Sheepshead fish are almost extinct in the Potomac River and Chesapeake Bay today. They can grow up to 30 inches

²⁵⁴ Maryland Fish Facts;

2007 White Perch. <http://dnr.maryland.gov/fisheries/fishfacts/whiteperch.asp>, accessed April 27, 2010.

²⁵⁵ Maryland Fish Facts;

2007 White Perch. <http://dnr.maryland.gov/fisheries/fishfacts/whiteperch.asp>, accessed April 27, 2010.

²⁵⁶ Maryland Fish Facts;

2007 White Perch. <http://dnr.maryland.gov/fisheries/fishfacts/whiteperch.asp>, accessed April 27, 2010.

²⁵⁷ Maryland Fish Facts;

2007 White Catfish. <http://www.dnr.state.md.us/fisheries/fishfacts/whitecatfish.asp>, accessed April 27, 2010.

²⁵⁸ James D. Rice, *Nature and History in the Potomac Country: From Hunter-Gatherers to the Age of Jefferson* (Baltimore, The Johns Hopkins University Press, 2009).

and 10 to 15 pounds.²⁵⁹ Black Drum fish are one of the largest fish in the Chesapeake Bay area, including the Potomac River. They can grow up to 5 ½ feet long and can weigh up to 146 pounds.²⁶⁰ These fish are still common in the Potomac River and could account for some of the other large fish bones that we have in our collection.

Henry Miller suggests that some fish are probably Red Drum or large Striped Bass/Rockfish. He was unable to provide a positive identification but noted that those are also likely species for this period.

The Red Drum fish is still found in the Potomac River today and is very large. It can grow up to five feet long and weigh up to 98 pounds.²⁶¹

Striped Bass are also known as Rockfish. These fish are also still found in the Potomac River today. They were also in the Potomac River during our time period and were often used as a source of food. Striped bass can grow up to 60 inches long.²⁶² Dr. Miller told us that, if this is the fish in our collection, then it had to be a very large one. It is a commonly found fish in this time period and it is very likely our inhabitants of Westwood Manor would have eaten them.

Oysters

Oyster shells reveal considerable information about the oyster (*Crassostrea virginica*) that once lived inside. For our purposes, the principal insight can be the environment in which the oysters lived and grew. This is recovered from the height-length ration (HLR), in which the height of an oyster is divided by its length. The height of an oyster is measured as its maximum dorsal-ventral dimension which means, usually, the longest part of the shell that is seen as top to bottom. The length of the oyster is measured as its maximum anterior-posterior dimension which means, roughly, perpendicular to the height and is usually seen as left to right.

This HLR gives the archaeologist a number that is fairly low. There are three ranges that give the three different environments in which an oyster can live. These three ranges are less than 1.3, between 1.3 and 2.0, and greater than 2.0. A low HLR, below 1.3, indicates that the oyster grew in an environment with firmly packed sands or mud. A high HLR, above 2.0, creates elongate growth. Elongate growth is when an oyster shell is able to grow more in its height than its length. This type of growth is found in densely clustered oyster reefs and in soft mud. Finally, the intermediate HLR, between 1.3 and 2.0, is a product of an environment with mixed sand and mud.²⁶³

In the Westwood Manor collection, there are 30 complete oyster shells.²⁶⁴ For these thirty shells, 83.33% of the full shells in this collection have an HLR between 1.3 and 2.0. Four shells have an HLR less than 1.3 and one shell has an HLR greater than 2.0. The oysters consumed at

²⁵⁹ Florida Museum of Natural History; Sheepshead.

<http://www.flmnh.ufl.edu/fish/gallery/descript/sheepshead/sheepshead.html>, accessed April 27, 2010.

²⁶⁰ Maryland Fish Facts;

2007 Black Drum. <http://www.dnr.state.md.us/fisheries/fishfacts/blackdrum.asp>, accessed April 27, 2010.

²⁶¹ Maryland Fish Facts;

2007 Red Drum. <http://www.dnr.state.md.us/fisheries/fishfacts/reddrum.asp>, accessed May 4, 2010.

²⁶² Maryland Fish Facts;

2007 Striped Bass. <http://www.dnr.state.md.us/fisheries/fishfacts/stripedbass.asp>, accessed May 4, 2010.

²⁶³ Kent.

²⁶⁴ There are 62 fragmented oyster shells in the collection, but the full shells are the only ones that can be measured for an HLR.

Westwood Manor likely came from the Wicomico River, downstream from the site. The Wicomico and Potomac rivers were teeming with oysters during this time period.²⁶⁵

Factors

Zooarchaeology reveals the many ongoing processes affect the distribution and condition of faunal remains. *Biotic* and *Thanatic* factors take place during an animal's life and death, while *Perthotaxic*, *Taphic*, and *Anataxic* factors involve the environment and its subsequent interactions with the bone. Finally, there are *Sullegic* and *Trephic* factors: Excavation and analysis, essentially.²⁶⁶

We see the first two factors in several places: epiphysis fusing and tooth wear is indicative of growth, and can be used to accurately find the age of death of the animal. Several (4+) bones in the collection had unfused epiphyses, a sign of a younger animal. Several mandibles still had teeth intact, and while some were heavily worn, others were barely worn at all, or even unerupted.²⁶⁷ With the proper skills, these could precisely date the age of the animal, revealing when butchering occurred (and thus what the animals were being used or bred for). Thanatic factors like butcher and cut marks tell us how humans used the animals after death.

The middle three factors can be seen in any scavenging that occurs, any weathering, erosion, or separation. Soil acidity plays a role here, as does rainfall and fire. Ultimately these factors would account for the varying quality of bone. The final two factors involve discovery, excavation, storage, cataloging, and even publication.

What does this have to do with the collection? Well, at each stage new variables are introduced that may skew the end result, including both the data and their interpretation. What animals were consumed here, and how many are domestic? When people turn to wild resources for the diet, which animals do they choose and which do they leave alone? When an animal was butchered, was its entire carcass used or just certain parts? Where are the scraps thrown out, and where are the choice cuts discarded? These dumping locations might not even be the same place.

Afterwards, what happens to the bone? Does the rain wash smaller bones away? Are the remains then scattered by scavengers? Does fire consume them? Do the weaker bones preserve? Does the acidity of the soil even leave any bones behind?

Finally, what do we as excavators do? We might not dig the entire site, or might not notice or screen smaller bones. Even during the best excavation, accidents occur. The weight of heavy machinery, or even a human, may shatter bone. A slip of the trowel, and a new cut appears. Does the archaeologist later mistake that as evidence for butchery?

Finally, the experience level of the interpreter plays a large role. Not many are trained in the field of zooarchaeology, and even experts require the aid of a comparative collection. Experience is often the best teacher, but different regions have different animals.

²⁶⁵ Rice.

²⁶⁶ Terry O'Connor, *The Archaeology of Animal Bones* (Gloucestershire, Sutton Publishing Limited, 2000), p. 21.

²⁶⁷ Simon Hillson, *Teeth* (Cambridge, Cambridge University Press, 1996), pp. 328-336.

Biases may creep in at any level, and there is no way to account for all variables. So even when it isn't a student project with approximate counts and tentative identifications, all conclusions should be taken with a grain of salt.

Historic Implications

When combined with the historical context, what does the faunal assemblage imply for the Westwood Manor site?

Our class was fortunate to have the benefit of the transcribed 1703 probate inventory for John Bayne, the owner of the property for much of the same period the artifacts are from.²⁶⁸ Along with all the furniture and goods, it inventories the livestock of the main house and four smaller properties. It lists, in total, 146 cows, 90 pigs, 26 horses, and no sheep at all.²⁶⁹ It is puzzling that no sheep are seen. As for the accompanying lack of horses in the archaeological record, one explanation would be that horses are nearly never butchered for food, and would possibly been sold off to a knacker, rather than be discarded at home.

Having a list of herds on property brings up the possibility of aligning the archaeological record with the documentary one. However, as is, only the number of bone and its species identification has been listed, the NSP. By looking at the elements and sides for each species, a Minimum Number of Individuals could be constructed.²⁷⁰ This should be done if at all possible, to attempt to tally how many animals are actually represented. Other studies could include an estimated biomass for each animal, to see how much food on average each sample could have provided.

At this time in the late 17th and early 18th century, this section of Maryland was transitioning from what was, to English households, a frontier to a settled region. Sheep was a relative rarity earlier in the century, due to predation by wolves, competition from deer, and the effort needed to pasture and corral them. As a result, they have been typified as a sign of wealth: one could afford the extra effort and cost to get the dual rewards of mutton and wool. However, as the region became more settled, the heavy reliance of Marylanders on wild sources of food decreased, and cultivation of livestock, including sheep, increased.²⁷¹ Cattle and pigs, unlike sheep, had thrived in the woods of Maryland, being let loose to roam far and wide for forage.

Deer was a source of meat, but the effort required to hunt made it more a meal of the wealthy, who could afford hunters to do the work for them. That isn't to say only the wealthy ate deer, all Marylanders did, but the wealthy were able to do so more often.

However, this observation is contradicted by George Alsop, an indentured servant who spent several years in the late 1650s/early 1660s in Baltimore County.²⁷² Alsop reported about the consumption of venison:

²⁶⁸ A transcription of the inventory was provided to us by Mr. Jim Tarrant, a descendant of John and Anne Bayne.

²⁶⁹ *Archives of Maryland*, vol. 24, pp. 134-140.

²⁷⁰ Richard G. Klein and Kathryn Cruz-Urbe, *The Analysis of Animal Bones from Archaeological Sites* (Chicago, University of Chicago Press, 1984), 26-32.

²⁷¹ Lecture by Henry Miller, April 16, 2010.

²⁷² George Alsop, *A Character of the Province of Maryland*, ed. Newton D. Mereness (Cleveland, The Burrows Brothers, 1902), ; available on-line at http://mith2.umd.edu/eada/html/display.php?docs=alsop_character.xml.

[Deer] flesh, which in some places of this Province is the common provision the Inhabitants feed on, and which through the extreme glut and plenty of it, being daily killed by the *Indians*, and brought in to the *English*, as well as that which is killed by the Christian Inhabitant, that doth it more for recreation, than for the benefit they reap by it. I say, the flesh of Venison becomes (as to food) rather denied, than any way esteemed or desired.

As English settlement expanded, however, wildlife was thinning out. Less deer and wolves meant an increase in sheep, a trend likely seen here in Westwood Manor. Large fish would still be caught or perhaps bought to supplement diet, but there is simply less wild meat on the table. Chicken, or “dung-hill fowl” as they were called, remained a steady source of eggs, and eventually meat.²⁷³

Conclusion

The faunal evidence certainly suggests a wealthier household. The presence of sheep points in this direction, as perhaps does the presence of deeper-water fish (possibly indicative of trading). The lack of deer is slightly puzzling, especially if this wealthy household traded with Indians, but it could be indicative of the thinning of wildlife in those changing times. Or it could be that they were disposed of differently, for some reason. There are definite signs of human consumption, as well as animal scavenging. The abundance of fish items in the Garden certainly means something, though if it means that the garden was excavated differently, or if the site served a different purpose than the Cellar remains hard to tell. It is also difficult to say for how long the cellar remained open to the elements. Are these bones representative only of the last decade of occupation/post-occupation? Was the cellar used as a garbage pit while the structure was still used as intended? Did the scavengers come before or after abandonment? And of course, what was missed in the course of excavation?

A further analysis of the faunal remains and all related issues is recommended to gain further insight into what is proving to be a wonderful site.

²⁷³ Lecture by Henry Miller, April 16, 2010.