

C-04 Robert Bartlett II Site Faunal Analysis

The C-04 Robert Bartlett II site is located in South Plymouth, Massachusetts just on the other side of the Eel river from the Plimoth Plantation museum. This was the first site excavated by Dr. James Deetz in his quest for an early Plymouth Colony housesite. Deetz was invited to excavate the site by Harry Hornblower, founder and president of Plimoth Plantation at the time, and the Society of the Descendents of Robert Bartlett who had erected a memorial boulder at the site in 1910.

Deetz excavations uncovered a cellar hole that he initially identified as being to a "smokehouse" but later, in 1963 when a stone lined hearth was found nearby, stated it was associated with the house. The site was initially believed to be the home of Robert Bartlett, a colonist who arrived on the Fortune in 1623. Unfortunately, the artifacts recovered place the date of occupation at late 17th to early 18th century. It is now believed that the site was the home of Robert Bartlett II, Robert's son, and dates from 1678-1743. The cellarhole deposits are believed, on the basis of clay pipe and ceramic evidence, to date to circa 1743 when the house may have been dismantled.

Faunal remains were recovered from the cellar hole and around the hearth. It is believed that the cellar hole deposit represents butchery and consumption waste place in the hole either by the site owners or neighbors to help fill it in. The hearth faunal remains, while scarcer, represent consumption waste from occupation of the house. Material was found either in cellar hole or scattered nearby in the "refuse area" to the north south and east, or to a limited extent near the hearth. Given the truncate nature of the cellar hole itself, it may be possible that the material found in the refuse area was actually from the cellar hole and had been plowed to the south, north and east over the years. There obviously had been disturbance at the site since the abandonment (burning?) of the structure since the cellar had been capped by the cobble layer. There was not a great concentration of material in the cellar holes, so possibly the house was abandoned gradually over time and most of the movables/ useful things were removed. The amount of material recovered and the lack of a charcoal layer seems to nullify the proposition that the structure burned.

The following contexts were identified during excavation and have subsequently been used for this analysis of the faunal remains:

Feature 1 initial 100' test trench divided into 5' sections A-V

Feature 2 Cellar

Feature 3 5' wide test trench perpendicular to F1 (Refuse area)

Feature 6 east of F3/A (Refuse area)

Feature 8 south of F1/Q (Refuse area)

Feature 9 east of F8 (Refuse area)

Feature 10 large stripping east of F3

Hearth

EU 1 by hearth

EU 2 by hearth

Feature 5

EU 1

Test Trench 1

Test pit 2

Trench 2

XU 5

The use of the term "Feature" by the early excavators appears to have been an idiosyncratic term and for the most part did not refer to actual features as we define them today. Instead the "feature" to the excavator was the area that they were testing, they could have just as easily called it Test 1 as Feature 1. For the following discussion, for the sake of clarity, the term "Feature" will only be used when discussing the cellar hole which Deetz's called "Feature 2", the hearth, termed merely as "hearth" and Excavation Unit (EU) 1 and 2 "by" the hearth by the 19xx excavators, and the refuse deposit area. This last feature was identified during reanalysis in the 1990s and not by the original excavators. It was found to contain ceramics, clay pipe fragments as well as faunal remains and was located to the south and east of the cellar hole. The term refuse area encompasses what Deetz identified as "features" 3, 6, 8, 9 and 10.

Shellfish

Along with the animal bones recovered, numerous fragments of shellfish were also found. A total of 206 fragments were recovered from the hearth (n=101) and the refuse area (n=105). These fragments represent the remains of four species that could have easily been collected a short distance to the northeast at Plymouth beach. The species present were the Surf Clam (*Spisula solidissima*) 56 fragments representing a minimum of 10 individuals; Soft-Shell Clam (*Mya arenaria*) 135 fragments representing a minimum of 26 individuals; Quahog (*Mercenaria mercenaria*) with one individual represented by four fragments; and Oyster (*Crassostrea virginica*) one individual represented by one fragment. Shellfish appears to have been a supplement to the diet of the inhabitants and may not have formed a larger portion of it.

Unidentified Mammal

A total of 202 (76.2%) of the 265 bone fragments recovered were classified as unidentified medium (n=133/ 65.8%) or large (n=69/ 34.2%) mammal due to their fragmented nature and lack of any identifiable surface markers that would allow species identification. Sixty-five of these unidentified fragments (32.2%) had been burned to the point of being calcined with the calcined bone making up 24.5% of the total faunal assemblage.

The distribution of unidentified bone across the test area can be seen in Table 1.

Table 1. Distribution of unidentified bone

Location	Unidentified	Calcined
Cellar hole	22	13
Refuse Area	77	38
Hearth	38	14

Totals	137	65
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The majority of the unidentified bone fragments were recovered from the refuse area to the south and east of the cellar hole with the second highest context being within the cellar hole itself. It is possible that the refuse area provided the material that was later dumped in the cellar. This possibility is being investigated by comparing artifacts from the two areas to possibly identify ceramic cross mends. The majority of the calcined bone was also recovered from the refuse area indicating that this was likely a household refuse dump that contained hearth debris and hearth cleaning ash.

Species Present

Sixty-three fragments could be identified to the species level. These fragments represented eight species and 11 individuals (Table 2).

Table 2. Overall site species occurrence

Species	NISP/ %	MNI/ %
Cattle	23	2
Pig	8	2
Sheep	21	3
Horse	4	1
Chicken	2	1
Duck	3	1
Sturgeon	1	1
Striped Bass	1	1
TOTALS	63	11

The majority of the species present were domestic mammals and birds with fish, like shellfish, making up a smaller percentage of the overall contribution to the diet of the inhabitants.

The cattle and horse remains obviously represent a greater meat weight and available food supply than

do the three sheep and two swine present in the assemblage. The small amount of faunal remains uncovered seems to presuppose the probability that there are other archaeological deposits present at the site yet to be found. These animals present in the assemblage point to a single deposition episode as opposed to one that lasted several months. All of these animals could have been consumed within a few weeks of each other. Their presence in the assemblage of the cellar may be a result of rapid filling of the cellar hole with yard trash or muck pile fill. Their presence obviously does not mean that this cellar hole was a smokehouse as Deetz suggested in 1958.

Cattle

Twenty-three fragments coming from a minimum of two cattle were recovered. These remains were found to be made up of one individual between 18-24 months and one over 30 months but less than 48 months old. Both of these individuals were younger but not calf age, possibly indicating that the inhabitants at the site were raising cattle more for meat as opposed to dairy purposes. If they were being raised strictly for dairying, the assemblage would be expected to include older individuals that had outlived their usefulness and very young individuals, usually bullocks, culled from the herd for veal.

Cattle remains were concentrated in the refuse area, the hearth and the cellar hole with the majority of the fragments coming from the refuse area (Table 3). The 13 skeletal elements

Table 3. Faunal remain locations

Location	Sus	Bos	Ovis	Equus	Chicken	Duck	Sturgeon	Striped Bass
Refuse Area	6	15	10	2	1	3	1	1
Hearth	1	3	1	1				
Cellar		3	5					
F1	1	1						
EU 1		1						
Trench 2			1		1			
NP			5	1				
Totals	8	23	22	4	1	3	1	1

contributing to those 23 cattle fragments took the form of primarily low meat yielding butchery waste (phalanges, metapodials, maxilla) with some medium meat yielding and only one high meat-yielding element present (Table 4). The various types of elements appear to have been spread across the site with concentrations related to the general faunal concentrations.

Table 4. Skeletal elements major domestic mammal species

Element	Bos	Sus	Ovis
High	1/ 7.7%	2/ 50%	4/ 36.4%
Vertebra	1 (50%)		3 (33%)
Humerus		1 (50%)	1 (15.5%)
Femur			
Scapula			
Pelvis		1 (50%)	
Medium	5/ 38.5%	1/ 25%	2/ 18.2%
Tibia	1 (25%)		
Fibula			
Ulna	1 (25%)		
Radius	1 (25%)		1 (15.5%)
Cranium			
Mandible	2 (100%)	1 (100%)	

Ribs			
Sternum			
Low	7/ 53.8%	1/ 25%	5/ 45.5%
Caudal Vertebra			
Maxilla	2 (100%)	1 (100%)	3 (100%)
Metapodials/ Tarsals/ Carpals	2 (25%)		1 (15.5%)
Calcaneus/ Astragalous			1 (15.5%)
Phalanges	3 (12.5%)		
Totals	13	4	11

Horse

The four horse bones recovered from the hearth and refuse areas show that the carcass was butchered by either removing the head with a knife at the atlas vertebra and then splitting the carcass down the dorsal line, or chopping through the atlas vertebra to separate it from the head. The chopping on the metatarsal was probably done to remove the foot from the lower leg. The I1 and M1 teeth present show evidence of heavy wear, indicating that this was probably a senile animal at least 20 months of age at the time of butchery.

Swine

Only eight bones identifiable as swine were recovered from refuse area (n=6), hearth (n=1) and xxx yard (n=1) (Table 3). When compared with other assemblages this is a surprising low amount of swine remains. These eight bones, maxillary and mandibular teeth, pelvis and humerus fragments, were from two individuals, one being aged at 14-26 months and one over 31/2 years. These probably represent one individual slaughter at the prime age of 18-24 months and one older possible sow that was no longer farrowing.

The swine remains show evidence of the division of the hindquarter through the center of the acetabulum. This may have been done to butcher the hindquarter into rump roasts and hams. The presence of teeth indicates that the swine were probably raised at or near the site and butchered there with the heads being processed to remove the cheeks, tongue, brain and possibly to make head cheese.

Sheep

Twenty-one fragments of sheep bones were recovered primarily from the refuse area (n=10) and cellar

hole (n=5) (Table 3). These bones were found to be from three individuals aged as follows: 1 under one year

1 over 25 months

1 over 3 ¾ years

The age profile is consistent with that recorded at other sites in Plymouth Colony and may be the result of sheep being raised for wool. In this sort of husbandry system, older individuals no longer producing good quality wool are killed as are excess lambs. The lambs were often sold at market as was the mutton to a lesser degree. The elements present (Table 4) show a good mixture of high, medium and low quality meat bearing elements consistent with the sheep being raised, butchered and consumed on site.

Sheep bones show the following butchery pattern. the mandible was chopped just behind the third molar and just behind the incisor to facilitate the removal of the tongue. The vertebrae were chopped in half as part of the process of splitting the carcass. The radius was chopped midway down the shaft in order to divide the front leg into at least two portions. The ribs were chopped just below the head and again approximately halfway down their length to make a rack of ribs.

Birds

Chicken

Two adult chicken bones representing one chicken were recovered from the refuse area and Trench 2 (Table 3). The bones were one sternum and one right ulna.

Duck

Three bones from an adult of species of duck similar in size to a mallard were recovered from the refuse area. It is unknown if this species was raised on site or was a wild fowl that was hunted.

Fish

Sturgeon

One fragment of a sturgeon (xxxx) scute was recovered from the refuse area. Sturgeons were a popular fish caught by both the Natives and English in the 17th and 18th centuries. The most common technique to catch them was with tidal nets. These were often set in a harbor between the shore and a sand bar at the mouth of a river (Josselyn 1674:140). They were also used for catching bass (Pory 1622: 9; Williams 1643:180; Wood 1634: 107). The other technique for catching sturgeons was the use of arrows or spears to impale the fish. Wood stated that the men would go out at night with torches and they would ... "carry a 40 fathom line with a sharp bearded dart fastened at one end." (Wood 1634:107). The occurrence of the sturgeon remains at the site indicate either that the inhabitants were engaged in setting up nets in the harbor to catch them or that they were able to purchase them, possibly in the Plymouth market.

Striped Bass

One Striped Bass (*Morone saxatilis*) vertebra was recovered from the refuse area. William Wood in 1634 stated that bass were "...one of the best fish, meat delicate, fine, fat, fast fish with a bone in its head which contains a saucerful of marrow, sweet and good, pleasant to the palate and wholesome to the stomach. When there is a great store we only eat the heads and store up the rest for winter." (Wood 1977:55). The seventeenth century sources are replete with European comments on the bass of New England. The techniques used to catch bass were generally described as being of four types, they were either caught with hooks, with seine nets, with larger tidal nets or they were speared. The hooks on which bass were caught were baited a piece of lobster meat which the women would have collected or

with mackerel (Wood 1977:113; James 1963c:87). Individuals caught this way were over two feet long (James 1963b:9). Seine nets were used for smaller individuals one foot to one and one half feet long (James 1963b:9). This was often done from sandbars at the mouths of rivers (Lindholt 1988:14). Larger tidal nets were used, probably for striped bass, across the mouths of small creeks. It was said people could catch 500 to 700 at a time (James 1963b:9). They were finally speared "...at the mouths of barred rivers (the Natives) being in their canoes, striking them with a fishgig." (Lindholt 1988: 100). This was supported by Roger Williams who stated that they would use 'ashop' (nets) "Which they will set in some little river or cove wherein they kill Bass (at the fall of the water) with their arrows, or sharp sticks, especially if headed with iron." (Williams 1971:180). After they were caught they were often smoke dried as was done with lobsters and scup (Wood 1977: 114). They were also used to make ..."a dainty dish of uppanquontup or heads of fish; and well they may, the brains and fat of it being very much and sweet as marrow." (Williams 1971:180).

Period sources state that bass were most plentiful in May, June, July and August (James 1963b: 9). It was reported that there were different places from which to catch the bass. When the herring and alewives passed up the rivers, they could be caught there, in the early summer when the Natives would gather lobsters they could be caught around the rocks, and in the fall around Michelmas (September 29) they could be caught in the seas (Wood 1977:55).

The presence of both sturgeon and striped bass in the refuse area may support the conclusion that the inhabitants were engaged in setting nets in the harbor to catch these fish. Their occurrence also indicates that the deposits in the area may have been deposited between May and September, when these species are in the area.

Domestic Species Bone Modifications

None of the recovered bones showed any evidence of rodent gnawing. This indicates either that the assemblage was not exposed long before being buried in the cellar hole or that there were few rodent present in the general area. A number of cattle and one sheep bone did bear evidence of being carnivore chewed though. Approximately 30% of the domestic mammal bones bore evidence of having been chopped as a result of the gross division of the carcass and subdivision into meat cuts (Table 5).

Table 5. Bone Modifications % are of the total for each species

Species	Gnawing	Chewing	Cutting	Chopping	Sawing
Bos taurus		3/ 13%	4/ 17.4%	8/ 34.8%	
Ovis aries		1/ 4.8%	1/ 4.8%	5/ 23.8%	
Sus scrofa				2/ 25%	
Equus				2/ 50%	
Totals		4	5	17	

Most species showed approximately the same relative percentage of chop marks on the bones, between 23 and 34 with only the horse showing more, possibly biased due to the small sample size. Chop and cut marks occurred more frequently on the cattle bones possibly due to butchery and consumption techniques that resulted in smaller cuts of meat that were roasted and then carved. No bones showed any evidence of sawing, a technique that came into prominence in the 19th century.

Conclusion

Although the faunal assemblage from the C-04 Bartlett site is rather small, it has been shown that it still has a great deal of information to offer regarding butchery and husbandry practices in the early to middle 18th century. It appears that domestic livestock provided the inhabitants with the bulk of their meat with birds, fish and shellfish providing far less. The presence of sturgeon and striped bass may show that these species, while not apparently providing a great deal of meat to the diet, were considered important enough to either be trapped, probably with nets in Plymouth Harbor, or purchased in Plymouth at the market.

The ages of the species present is consistent with the assemblages from other sites such as the C-06 Bradford site where the following ages were represented:

C-06 C-04

Cattle

1 under 1 year 1 18-24 months

1 over 3 ½ years 1 30-48 months

Swine

1 just over 1 year

1 well over 1 year 1 14-26 months

1 under 22 months 1 over 3 1/2 years

Sheep

1 under 30 months 1 under 1 year

1 over 55 months 1 over 25 months

1 over 70 months 1 over 3 ¾ years

Similar kill-off patterns are seen between the two sites with regards to the swine and sheep but the cattle show a slightly older kill-off pattern. This may be the result of idiosyncratic inhabitant differences or real differences due to different husbandry practices.

Appendix

Faunal Catalog

Sus scrofa

Pelvis- 1010 (XU 5 hearth)

Pelvis- 331 (Feature 6)

Left Humerus 605 (Feature 10) fused proximal end, broken

MNI: 1

Max. M2 right 333 (Feature 6)

Max M3 right 332 (Feature 6)

Man M1-M2 Left 081 (Feature 1 Sq N)

Root frag 345 (Feature 6)

MNI: 1

Bos taurus

Thoracic vertebra 353 (feature 6)

Ulna 598 (Feature 10)

Radius 349 (Feature 6)

Left Tibia 244 (Feature 3 Square C) Distal unfused

Right Metatarsal 351 (Feature 6)

Right Metatarsal MS 389 (Feature 8 Square N)

Right Metatarsal MS 599 (Feature 10)

Right Metatarsal MS 596(Feature 10)

Phalange I 591 (Feature 10)

Phalange I 350 (Feature 6)

Phalange II 915 (EU 2 Strip E)

MNI: 2

Max Pm3 Right 373 (Feature 8 Sq L)

Max M1 Right 522 (EU 2)

Max M2 Left 170 (Feature 2 Zn 3)

Man Pm1 Left 608 (Feature 10)

Man Pm2 Left 609 (Feature 10)

Man Pm2 Right 043 (Feature 1 Sq L)

Man M1 Right 145 (Feature 2 Zn 1)

Man M1 Right 948 (EU 1 Pit 1)

Man M2 Right 396 (Feature 8 Sq P)

Molar Frag 401 (Feature 8 Sq N)

Molar Frag 169 (Feature 2 Zn 3)

MNI: 2

Equus

Atlas vertebra 873 (NP)

Left Metatarsal 414 (Feature 10)

MNI: 1

Man I1 Left 503 (EU 2)

Max M1 Left 593 (Feature 10)

MNI: 1

Ovis aries

Cervical Vertebra 605 (Feature 10)

Lumbar Vertebra 264 (Feature 2 Square F)

Lumbar Vertebra 1058 (Trench 2)

Left Humerus 875 (NP) Proximal

Left Radius 592 (Feature 10)

Left Calcaneum 601 (Feature 10)

Left Metacarpus 875 (NP)

MNI: 1

Max Pm2 Right 607 (Feature 10)

Max Pm2 Right 205 (Feature 2 Zn 4)

Max Pm2 Left 610 (Feature 10)

Max M1 Right 204 (Feature 2 Zn 4)

Max M1 Left 594 (Feature 10)

Max M2 Right 611 (Feature 10)

Max M2 Right 206 (Feature 2 Zn 4)

Man Right 777 (NP)

Man Left, Right 875 (NP)

Man Right 407 (Feature 9 Sq N)

Man Pm2 Right 467 (EU 3)

Man M3 Right 410/ 006 (Feature 10/ Feature 2 Fill)

Man M3 Left 874 (NP)

Molar Frag 605 (Feature 10)

MNI: 3

Birds

Chicken

Sternum 265 (Feature 3 Sq E Fill)

Ulna Right 1061 (Trench 2)

MNI: 1

Duck

Sternum 262 (Feature 3 Sq E Fill)

Clavicle 262 (Feature 3 Sq E Fill)

Vertebrae 262 (Feature 3 Sq E Fill)

MNI: 1

Fish

Sturgeon

Scute 345 (Feature 6)

MNI: 1

Striped Bass

Vertebra 262 (Feature 3 Sq E Fill)

MNI: 1