C-06 William Bradford II Faunal Analysis

C-06 (c. 1730)

The C-06/ William Bradford III site is located in Kingston, Massachusetts. Local tradition said that this was the homesite that Mayflower passenger William Bradford established in the second quarter of the seventeenth century. A stone marker was even placed on the site by the Society of Bradford Descendents? stating the same. The late Dr. James Deetz was given the opportunity to excavate this site in 196x. During the course of the excavations he identified a typical hall and parlor house plan, two rooms flanking a central chimney and a lean-to addition on the rear, that had been robbed of its foundation stones, and a cellar hole. The majority of the material recovered came from the cellar hole. Stratigraphy within the cellar hole showed that the house had been dismantled in the 1730s and the cellar hole subsequently partially filled in. Later in the nineteenth century, more household rubbish was thrown into the depression left by the filling of the cellar hole, essentially filling the hole up.

A total of 149 fragments of mammal and bird bone were recovered from he C-06 (Bradford) site during Deetz's 196x cellar hole dig. These fragments represent faunal remains deposited into the cellar hole during and immediately after the demolition of the house in circa 1730. From these 149 fragments, 15 individuals were identified, three domestic mammal and three bird species (Table 1). As there was little evidence of rodent

Table 1. Species Represented

Species	NISP/ %	MNI/ %
Bos taurus	39/ 26%	3
Ovis aries	40/ 26.7%	3
Sus scrofa	33/ 22%	3
Medium Mammal	16/ 10.7%	
Chicken	14/ 9.3%	3
Duck	3/ 2%	2
Goose	4/ 2.7%	1
TOTALS	149/ 100%	14/ 100%

gnawing and little for carnivore chewing present, it is likely that the bones did not lie exposed outside of the cellar hole for any great length of time before being deposited in it (Table 2). The deposit looks fairly uniform across the cellar with no piles; possibly indicating it was filled as soon as the house above was dismantled.

Table 2. Bone modifications

Species	Gnawing	Chewing	Cutting	Chopping	Sawing
Bos taurus			1	11	
Ovis aries		3	4	16	
Sus scrofa		2		5	
Mammal		1			
Totals	0	6	3	32	0

Unidentified

Sixteen fragments of unidentified medium mammal long bone and flat bone were recovered from the cellar hole. These likely represent fragments of swine and sheep but were too small to identify positively. The high level of identification (89.3%) is a good indicator of the primary depositional nature of the assemblage. The faunal elements were not exposed to weathering, trampling and rodent or carnivore damage to the extent that yard scatter or secondary depositional assemblages are. This resulted in a higher than average level of identification.

Cattle

Thirty-nine fragments identified as coming from domestic cattle were recovered. These fragments represent three individual cattle, one aged approximately one year old, and two over 31/2 yeas old. Elements from most body parts except the ulna, radius, sternum and pelvis were recovered with the majority of the fragments being identified as cranial, rib and upper forequarter elements. This likely indicates a mixture of butchery and consumption waste.

The butchery marks present on the cattle remains predominantly took the form of chop marks (11 of 12 identified marks) with only one cut mark being identified on one rib. Cattle cranium fragments bear evidence of chop marks to the posterior portion while the atlas vertebra was being removed from the rear of the skull. The lumbar vertebra bear evidence of the division of the carcass in half down the midline, probably as one of the first steps in the butchery process. This was done to reduce the carcass into more manageable pieces. The chopping appears to have been done off to one side of the vertebra resulting in the spinus processes being separated from the vertebral bodies. It is unknown if the bodies

were also split in half or cooked as such. The scapula shows chopping through the neck of the articulating end to create a shoulder cut. One scapula present bears evidence of two chops to it, one that did not penetrate deeply enough to separate it. The other scapula shows evidence of the division of the scapula blade into smaller portions by chopping. The humeri bear evidence of chopping through the articulating end that corresponds with the scapula distal articulating end to create a stewing cut. The other humerus fragment has been chopped just above the distal end and may show evidence of the breaking of the bones to remove the marrow. Ribs have been chopped just below the articulating ends with those ends remaining with the thorasic vertebrae and also a chop along the midpoint of the shaft to create racks of ribs. One femur fragment shows evidence of having a piece of the proximal articulating end chopped off, probably when the femur was being separated from the pelvis. The tibia shows evidence of chopping just proximally from the distal end of the tibia possibly to create a shank cut while the proximal end would remain with the femur to create a "round' for roasting. The calcaneus shows evidence of being chopped through at the articulating facet and at the distal end. The distal cut probably resulted from the chopping of the distal tibia while the other cut may have bee to remove the distal tibia "shank" from the astragelous and metatarsal. All of these butchery marks appear to relate either to primary gross carcass division or to secondary cut creation. Only one possible consumption mark appears present on one rib possibly indicating that this assemblage was the result of consumption activities centering on the boiling of meats as opposed to roasting and carving.

Swine

Thirty-three fragments from three swine were recovered. By combining the epiphyseal fusion and tooth eruption and wear ages together the minimum ages for the individuals present in the assemblage were arrived at as two female swine: one just over one year old and one well over one year old and one male swine under 22 months old. The identification of male versus female swine was based on the presence of sexually dimorphic canines. The majority of elements present appear to be from craniums and associated mandibles or metapodials and phalanges with some ribs, vertebra and one scapula present. This assemblage is likely the result of butchery waste being thrown into the cellar hole with much of the remainder of the carcass being preserved, eaten or sold elsewhere. This hypothesis is supported by the lack of any cut marks on the bones. Some evidence of carnivore damage was found on two of the bones indicating that carnivores did have access to them before they were buried.

Butchery marks were found in the following locations. The thorasic vertebra bear evidence of the dividing of the carcass in half with an off center chopping through a portion of the vertebral body. The ribs were chopped just below the articulating end so that as a result the articulating end would remain with the vertebral body. The scapula shows evidence of chopping through the neck of the articulating end and through the blade to create a small stewing cut while the articulating end would remain with the proximal end of the humerus. The metatarsal shows evidence of having been chopped through at midpoint to remove the phalanges from the metatarsals.

Sheep

Forty fragments were identified as caprine, and as far as could be identified, sheep. These fragments represent three individuals with the ages of one under 3 years old, one over 55 months old and one over 70 months old. This distribution of ages likely indicates a husbandry system that focused on wool production with some lambs being consumed. Once the older sheep stopped producing good wool, they would have been killed. The majority of the sheep elements present came from the fore and hind limbs with some ribs, vertebra and mandible fragments also being present. This seems more indicative of consumption waste with some butchery waste mixed in as well.

Butchery evidence took the form of predominantly chop marks (16) with only four cut marks present on one mandible, one radius, one ulna and one tibia. Carnivore chew marks were also present on three

bones. The butchery chop marks appear to be related to the following butchery techniques. Three mandible fragments bore butchery marks, one being a portion of the upper ramus bearing a cut mark resulting from the disarticulation of the mandible from the cranium and two bearing chop marks anteriorly and posteriorly of the tooth rows resulting from the breaking of the jaw for the removal of the tongue after the head had been separated from the body. One thorasic vertebra fragment had chop marks on both sides of the vertebral spine indicating that the carcass was split in half and then possibly further divided to remove the ribs or reduce it to smaller pieces.

Lumbar vertebra showed evidence of the division of the carcass by means of splitting and the possible chopping off of the vertebral spinus processes on the sides to isolate the vertebra. The ribs show evidence of possibly being broken from the vertebrae and being chopped 1/2 way down their length. Two scapula fragments show evidence of the division of the scapula through the neck of the articulating end by chopping to separate the forequarter from the shoulder possibly to create a "shoulder roast". The humerus was chopped just above the distal articulating end to create a roast shoulder of the upper part and this lower part possibly being part of a shank roast or a division of the leg into smaller portions for boiling. The butchery of the ulna and radius seem to support this with the ulna being chopped through the proximal end possibly as a result of chopping through the humerus near the distal end while the leg was fully extended, and of chopping distally of the proximal end which correlates with the chop marks on the radii to crate smaller portions for stewing. All four of the radii bear evidence of chopping just below the proximal end with the proximal end remaining with the ulna and distal end of the humerus and the distal end remaining with the distal portion of the ulna and probably with the proximal end of the metacarpal. The femur shows evidence of chopping through the mid-shaft to divide the leg into 2 portions. The proximal end remaining with the pelvis and the distal end remaining with the proximal end of the tibia. The tibia was chopped through the mid-shaft with the proximal end remaining with the distal end of the femur and the distal end remaining with the astragelous and calcaneus with the metatarsal being removed. Tibia also bears one cut mark from consumption of the mid-shaft.

Table 3. Element Distribution by Species

Element	Bos	Sus	Ovis
High	**7/ %**	**2/ %**	**6/ %**
Vertebra	2/ 2	1/ 1	2/ 2
Humerus	1/ 2		1/ 1
Femur	2/ 2		1/ 1
Scapula	2/ 3	1/ 2	2/ 2
Pelvis			

Medium	**12/ %**	**5/ %**	**9/ %**
Tibia	1/ 3		1/ 1
Fibula			
Ulna			1/ 1
Radius			2/ 2
Cranium	1/ 8		
Mandible	2/ 4	3/ 5	3/ 3
Ribs	8	2	2
Sternum			
Low	**4/ %**	**8/ %**	**4/ %**
Caudal Vertebra			
Maxilla	1/ 1	2/ 2	
Metapodials/ Tarsals/ Carpals	1/ 1	5/ 5	1/ 1
Calcaneus/ Astragelous	1/ 1		3/ 3
Phalanges	1/ 1	1/ 1	
TOTALS	**23**	**15**	**19**

Table 3 shows the relative occurrence of the various elements recoevred from the cellar hole and how

they relate to the meatiest areas of the body (more meat equals a higher ranking). Swine remains had the greatest amount of low meat bearing elements, a finding that supports the notion that the swine remains represent butchery waste as opposed to consumption or butchery and consumption. The sheep and cattle remains are almost the same, supporting the interpetation that these represent both consumption and butchery waste

Birds

Table 4. Bird elements recovered

Element	Chicken	Duck	Goose
Coracoid	1R		
Humerus	1R		1L, 1R
Radius	1L		
Ulna		1L	1R
Metacarpal			1L
Sternum	1		
Pelvis	1		
Tibia	1L, 1R	2L	
Metatarsus	3L, 1R		

Chicken

A total of fourteen fragments identified as having come from eleven elements of three chickens were recovered from the cellar hole (Table 4). Two of these chickens were immature individuals under 1 year old and one was an adult. This age distribution may reflect a preference for young chickens, possibly even gelded roosters, as well as the consumption of one older individual, possibly a female no longer laying eggs. The occurrence of elements from most parts of the body for the adult bird and only the tibia and metatarsals for the immature birds may indicate that the adult bones represent a bird butchered and consumed at the site while the immature individuals were only butchered here.

Duck

Three fragments from three elements of two individual ducks were recovered (Table 4). It is unknown if these ducks were raised or wild. The presence of only the tibia and ulna, elements bearing very little meat, may point to these pieces having been deposited during butchery and not consumption.

Goose

Four fragments from four elements of one goose were recovered (Table 4). Like the duck present, it is unknown if this is a wild or barnyard raised individual. The presence of only wing bones may indicate that the goose arrived at the site either butchered or in pieces and that it was not raised here.

Conclusion

The species represented in the C-06 cellar hole probably are individuals that were butchered at or near the site in the fall or winter with the butchery and consumption waste being thrown into the cellar hole to fill it up. If the house had been dismantled before the animals were butchered then the assemblage may have come from one of the neighbors who helped dismantle the house and may not be directly associated with the occupants of the house itself. If on the other hand the refuse, ceramics, pipes, faunal, metal, that was thrown into the cellar hole after the house was dismantled represent material found in muck piles or piles used to fill the occasional hole around the house, then we should expect more evidence of rodent and carnivore damage to the bones. As there was not a great deal of this type of damage it may be assumed that he assemblage was created not long after the house was removed. The species present are typical of the numbers and types that would be expeceted to be found around and eighteenth century farmyard. Their presence in the cellar hole indicates that it is likely the hole was filled during the fall to winter when these species would have been killed with less of a fear of the meat spoiling. The individuals present appear to represent a mix of those slaughtered at the prime age of slaughter, such as any of the younger ones, and those that had outlived their usefulness on the farm and were slaughtered because they no longer were good milkers (cattle), layers (chickens), farrowers (swine) or wool producers (sheep). Removing these older "worn out" individuals, the kill-off profile that is left may represent individuals killed at the most popular slaughter ages for their species at the time: cattle under 1 year old; swine over 1 year under 22 months; sheep under one year (lamb?); chickens under one year.

Appendix I

Faunal Catalog

Cattle

Mandibular Pm2 left old

4244 Mandibular I1 left old

4452 Mandibular Pm2 right young

6340 Maxillary M1 right old

4241 M fragment

3870 Mandible fragment

3271, 3272 Calvarium rear portion

3868 Cranial fragment

4106, 4xxx Cranial fragments

4095, 4102, 4098 Cranial fragments

4034 Thorasic vertebral spine

4216 Lumbar vertebra ½ chopped fused

3866 Rib midsection

4099 Rib midsection

3863 Rib midsection

4064 Rib left midsection

4227 Rib right cut

4104 Rib Right proximal

4096 Rib midsection

4097 Rib left midsection

3665 Rib proximal right chopped

4329 Scapula Right midsection

4222 Scapula right midsection chopped

4214 Scapula right proximal chopped

4220 Humerus right proximal partially fused

3663 Humerus right distal fused, chopped

3864 Femur right proximal epiphysis fused

4218 Femur right proximal partially fused

4481 Tibia midsection

4549 Tibia left distal fused chopped

3918 Tibia midsection

3667 Carpal

4553 Phalange 1 fused

4219 Calcaneus right

Total: 39

MNI: 2

Sus scrofa

4450 Mandibular I2 right no wear

4243 Mandibular C right female slight wear

3661 Mandibular C right female worn

4445 Mandibular Pm2 right

4447 Mandibular Pm3 right

4448 Mandibular M2 right

4446 Mandibular M3 right unworn unerupted

4110 Mandibular M2 left unworn unerupted

4558 Mandibular Pm4 left slight wear

M1 left g

M2 left d

3316 Mandibular M1 left e

4035 Mandibular M3 left unerupted

3873 Mandibular Pm2 left unworn

4245 Maxillary C left female

4449 Maxillary C right male unworn

4451 Maxillary Pm4 right unworn

4482 Maxillary M2 right a

4559 Maxillary M2 left d

4550 Mandible left ramus fragment

4558 Mandible left fragment

3871 Mandible right fragment

4239 Thorasic vertebra fused

4235 Rib Right proximal end

4233 Rib right proximal end

3862 Scapula Right midsection

4224 Scapula midsection

4217 Metatarsus IV proximal

4440 Metatarsus Unfused

4223 Metacarpus IV unfused distal

3428 Carpal

3428 Carpal

4443 Phalange 1 unfused

Total: 33

MNI: 2

Ovis aries

4232 Mandible ramus cut

4242 Mandible right midsection chopped

Pm1

Pm2

Pm3

Pm4 14s

M1 14a

M2 9a

M3 11g

3657 Mandible Left Midsection

Pm2

Pm3

Pm4 9a

M1 9a

M2 9a

3921 Mandibular M2 left 8b

3659 Mandibular M3 left 4a

3920 Mandibular M3 left 4a

3660 Mandibular M2 right 5b

3922 Mandibular M1 right 9a

3580 Thorasic vertebra spine

4238 Lumbar vertebra ½ chopped unfused epiphysis

4236 Rib right midsection

3867 Rib right midsection

4221/ 4225 Scapula Left midsection chopped

4557 Scapula right proximal chopped

4094 Humerus left distal fused chopped

4551 Ulna right proximal fused cut

4100 Radius Midsection

3338 Radius right proximal fused

3865 Radius right proximal fused

6209 Radius right distal unfused

4215 Radius Right distal Fused Cut

3337 Femur Left midsection

3367 Tibia left distal fused

4442 Astragelous right

4228 Calcaneus Right

3426 Calcaneus left midsection

4552 Metatarsus Left Fused

Total: 40

MNI: 2

Chicken

4330 Coracoid right

4066 Humerus right distal adult

3872 Radius left proximal

3669 Sternum

3670 Pelvis

4226 Tibia left midsection

4246 Tibia right distal adult

3315 Tibia midsection immature

6341 Metatarsus left distal immature

3869/ 3427 Metatarsus Left immature

3430 Metatarsus Right distal adult

4108/ 4109 Metatarsus left proximal adult

Total: 14

MNI: 3

Duck

4444 Ulna left proximal

4240 Tibia left midsection

3581 Tibia left midsection

Total: 3

MNI: 2

Goose

3868 Humerus left midsection

4554 Humerus right midsection

4441 Ulna right proximal

3429 Metacarpus left proximal

Total: 4

MNI: 1

Age Profile

By tooth eruption and wear

Bos taurus (2)

3658 mandibular M1 left young +6mo-1year?

3662 Mandibular Pm2 left old +2 ¼ years

4244 Mandibular I1 left old +1 ¾ years

4452 Mandibular Pm2 right young +2 1/4 years

6340 Maxillary M1 right old +6mo

One about 1 year old

One over 2 ¼ years

Sus scrofus (2)

4450 Mandibular I2 right no wear 17mo

4243 Mandibular C right female slight wear +12mo

4445 Mandibular Pm2 right +16mo

4447 Mandibular Pm3 right +16mo

4448 Mandibular M2 right +13 mo

4446 Mandibular M3 right unworn unerupted -22mo

4558 Mandibular Pm4 left slight wear +16mo

M1 left g 10-26mo

M2 left d 10-26mo

3873 Mandibular Pm2 left unworn -16mo

3316 Mandibular M1 left e 10-26mo

4110 Mandibular M2 left unworn unerupted -13mo

4035 Mandibular M3 left unerupted -13mo

3661 Mandibular C right female worn +12mo

4245 Maxillary C left female +22mo

4449 Maxillary C right male unworn -22mo

4451 Maxillary Pm4 right unworn -16mo

4482 Maxillary M2 right a 5-14mo

4559 Maxillary M2 left d 10-26mo

One around 17 months

One under 13 months

2 females: 1 just over 1 year

1 over well over 1 year

1 male under 22 months

Ovis aries (2)

4242 Mandible right midsection chopped

Pm1 +30mo

Pm2 +30mo

Pm3 +40mo

Pm4 14s +40mo

M1 14a +6mo/ 50-70mo

M2 9a +18mo/ +25mo

M3 11g +48mo/ +70mo

3657 Mandible Left Midsection

Pm2 +30mo

Pm3 +40mo

Pm4 9a +40mo

M1 9a +6mo/+25mo

M2 9a +18mo/ +25mo

3921 Mandibular M2 left 8b +18mo/ +50mo

3659 Mandibular M3 left 4a +48mo/ +55mo

3920 Mandibular M3 left 4a +48mo/+55mo

3660 Mandibular M2 right 5b +18mo/+28mo

3922 Mandibular M1 right 9a +6mo/+25mo

One over 70 months

One over 55 months

By fusion ages

Bos taurus (2)

4220 Humerus right proximal partially fused +4years

3663 Humerus right distal fused, chopped +18mo

3864 Femur right proximal epiphysis fused +3 ½ years

4218 Femur right proximal partially fused +3 ½ years

4549 Tibia left distal fused chopped +2 ½ years

4553 Phalange 1 fused +1 ½ years

Two over 3 ½ years

Sus scrofus (2)

4440 Metatarsus Unfused -2 ½ years

4223 Metacarpus IV unfused distal -2 years

One under 2 years

Ovis aries (2)

4094 Humerus left distal fused chopped +10mo

6209 Radius right distal unfused -3 years

4215 Radius Right distal Fused Cut +3 years

3367 Tibia left distal fused +2 years

One under 3 years

One over 3 years