

Excavation of the Wiest Site (36YO46) in 1979 yielded a sizeable assemblage of dietary bone that, together with review of relevant historical documents, provides insight to foodways at both Camp Security and Camp Indulgence. Though this site likely represents the area of Camp Indulgence, occupants of both camps would have subsisted on the same food. The faunal assemblage consisted of a total of 11,163 pieces of bone recovered from 48 features, three trenches, four surface samples and three unknown proveniences (**Appendix A**). Approximately 71% of the assemblage (n=7985) was inventoried. The remaining 29% consisted of bone determined to be unidentifiable minimally to the taxonomic level of Order, and was recovered from features for which an identifiable sample of bone had been inventoried. Of the inventoried bone, 14% (n=1110) was identifiable to species. An additional 267 bone specimens were identifiable to at least Family (e.g. Anseriformes, Galliformes) or Order (e.g. Artiodactyl, Testudinata). The majority of the assemblage, however, was identifiable only to Class (mammal, bird, fish). Minimum Number of Individual calculations and meat weight estimates were generated to approximate poundage of meat consumed by camp inhabitants. Agricultural data for several contemporary farmsteads was obtained from local historical records, and demonstrated typical livestock varieties and quantities. Comparison of foodways, represented by the assemblage and typical 18th century British fare and soldiers' fare, suggested how food supply at the encampments could have been perceived by the British soldiers. Resources for this comparison included cookbooks from the late 18th century and early 19th century, as well as published research on 18th century foodways and Revolutionary War provisioning.

Foodways at Camp Security/Camp Indulgence

The faunal assemblage demonstrated reliance on domesticated species, with minimal hunting and fishing of wild game (**Table A**). Domesticated species represented were cow, sheep, pig and chicken. Wild game included turkey, duck, goose, pheasant, turtle and fish. A minimum of nine cattle and nine sheep were represented by 642 bone specimens and 319 bone specimens, respectively. A minimum of three pigs were represented by 124 bone specimens. Bone identifiable only as large mammal (n=1750, 22%), medium mammal (n=1265, 16%) and medium or large mammal (n=3297, 42%) likely resulted from breakage of cattle, pig and sheep elements. A minimum of two chickens were represented by five leg elements and one wing element, and a minimum of two geese were represented by two wing elements and one leg element. A minimum of one duck was indicated by a single wing element, a minimum of one pheasant was represented by two wing elements and one leg element, and a minimum of one turkey was represented by five leg elements. A minimum of one box turtle was indicated by two carapace fragments, while a minimum of one snapping turtle was represented by one plastron fragment. Four ribs and three vertebrae indicated consumption of at least one fish, but these remains were not identifiable to species. One horse element, the distal end of a metapodial (**Photo A**), was found and exhibited charring and breakage. No other horse elements were present in the assemblage, which suggested the metapodial was part of an isolated horse cut brought to the site, possibly for extraction of by-products like hartshorn jelly, which could be made from burned hooves and used to treat diarrhea (en.wikipedia.org).

Table A: Assemblage Composition

Taxon	NISP	MNI	Taxon	NISP	MNI
<i>Mammal</i>			<i>Bird</i>		
Cow (<i>Bos taurus</i>)	642	9	Chicken (<i>Gallus gallus</i>)	6	2
Pig (<i>Sus scrofa</i>)	124	3	Pheasant (<i>Phasianus colchicus</i>)	3	1
Sheep (<i>Ovis aries</i>)	319	9	Turkey (<i>Meleagris gallopavo</i>)	7	1
Sheep/Goat	1	-	<i>Galliformes</i>	7	-
<i>Artiodactyl</i>	278	-	Goose	3	2
Horse (<i>Equus caballus</i>)	1	1	Duck	1	1
large mammal	1750	-	<i>Anseriformes</i>	1	-
medium mammal	1265	-	<i>Columbidae</i>	1	1
medium or large mammal	3297	-	large bird	10	-
small mammal	10	-	medium bird	97	-
small or medium mammal	48	-	medium or large bird	3	-
indeterminate size mammal	2	-	small bird	4	-
<i>Turtle</i>			small or medium bird	11	-
Snapping Turtle	1	1	<i>Fish</i>		
Box Turtle	2	1	medium fish	1	1
large turtle	1	-	indeterminate size fish	6	-
medium turtle	2	-			



Photo A: Horse Metapodial Fragment

Skeletal representation for cow, sheep and pig suggested possible livestock maintenance at the site, or at least butchering of whole carcasses. Cow and sheep elements represented every portion of the skeleton. Complete skeletal representation for cow was indicated by horn and other elements from the crania (head), as well as torso, forelimb, hindlimb, and foot elements. Complete skeletal representation for sheep was also indicated by crania, torso, forelimb, hindlimb, and foot elements. Elements identifiable as pig were from the crania, forelimb, hindlimb and foot. Pig torso elements were likely among the numerous rib and vertebrae fragments identifiable only as medium mammal and medium or large mammal, however. Livestock maintenance could have been undertaken by the residents of Camp Indulgence; men, women and children at the camp engaged in a variety of trades, which included making clothing fasteners, lace and spoons at least during the winter (Lamb 1809:398). Maintaining livestock at the camp would also have provided the prisoners access to milk, other dairy products, and wool.

Livestock maintained at Camp Indulgence were likely obtained from local farmers after the camp was established. Probate inventories were found for 11 local farmers mentioned in the 1783 taxable list for Hellam Township (Gibson 1886:605-606). The inventories were compiled shortly after their deaths between 1788 and 1805, and reflect the number and types of livestock owned (*Table B*), grains cultivated and other agricultural practices. These inventories suggested sheep were more abundant than swine, but cattle for dairy and for slaughter were the most common livestock. While the value assigned to livestock were dependent upon the condition of the livestock, the market of the time, and the individual conducting the inventory, higher values were consistently applied to cattle than sheep or swine in all the records; this difference in value likely owed to utility of cattle for dairy products, meat and as draft animals. Cattle breeds likely included Bakewells, Holstein-Friesians and, possibly red Devons, based upon the noted colorations “brindle”, “black and white”, “red” and “red and white”. Domesticated fowl were rare; seven geese were noted in the stock of Ulrich Neucommer in 1787, and five turkeys were among the stock of General James Ewing in 1805.

Table B: Livestock Totals from 1788 to 1805 in Probate Inventories

Landowner and year of inventory	Number of Sheep (<i>and value</i>)	Number of Swine (<i>and value</i>)	Number of Cattle (<i>and value</i>)
Ulrich Neucommer 1787	12 (5£ total)	4 (3£ 20s)	9 (26£ total) (4 cows, 4 calves, 1 bull)
Martin Huber 1788	6 (1£ 16s)	3 (2£ 15s)	6 (13£ total)
Widow Barbara Beidler 1789	11 (4£ total)	4 (1£ total)	14 (17£ total) (8 cows, 2 calves, 1 steer, 1 bull)
John Mate 1789	8 (4£ total)	4 (2£ total)	20 (40£ total) (15 cows, 3 calves, 1 bull, 1 steer)
Henry Strickler 1792	2 (5£ 10s)	-	4 (9£ total)
Jacob Shultz 1794	-	14 (8£ 15s)	7 (22£ total) (6 cows, 1 bull)
Michael Miller 1796	7 (2£ 12s)	-	7 (28£) (4 cows, 2 calves, 1 bull)
Christian Lehman 1797	1 flock (5£ 17s)	1 flock (5£ 19s)	5 (22£ total) (5 cows, 2 calves)
Sebastian Brown 1802	-	-	5 (~10£ total) (3 cows, 2 calves)
Baltzer Fitz 1803	7 (5£ total)	12 (8£ 10s)	4 (14£ total) (3 cows, 1 steer)
Gen. James Ewing 1805	-	-	10 (\$133 total= ~30£) (3 cows, 7 young steer)

In rural locales, butchery time was generally late fall/early winter when the stock were fattened after harvest, and the weather was cold enough to prevent meat spoilage. At Camp Security and Camp Indulgence, slaughtering of stock likely occurred throughout the year on an as-needed basis, just as it would have in any urban setting. Writing in the mid-19th century, one culinary expert noted fall as the best season to obtain quality meat, however. Meat of all varieties was supposedly better after the animals had been fattened, and the weather was cool enough to allow meat to hang for days or weeks until tender (De Voe 1867:27, 28). If a cooled location, such as a springhouse, well, or cellar was available, and if the animal had been well-fed and tended, meat freshly butchered during the warmer months could also be “good eating” (ibid.).

Preservation of meat during the late 18th century was typically achieved through smoking, salting, or potting in ceramic jars, and storage in naturally cooled areas such as springhouses or root cellars. Meat was smoked over a fire in a smokehouse, in a smoke hole in a chimney, or in a barrel used as a makeshift smokehouse, and then hung from the ceiling until consumed (Shephard 2000:101; Halsted 1881). Salted meat was rubbed with rock salt or sea salt, both of which dissolved slowly enough to properly preserve the meat, and allowed to hang or, if possible, stored in a container with more salt, until eaten (De Voe 1867:108; Shephard 2000:54-55). Salting was not the favored method for beef or mutton, however, since both meats seemed

to shrink and darken when salted, and become dry and tasteless when boiled as necessary to remove the salt before consumption (De Voe 1867:28; Shephard 2000:63). Potted meat was pre-cooked and then sealed by a thick layer of butter or lard in a ceramic jar (Shephard 2000:183).

Springhouses, ground cellars or home basements were commonly used for storage of these treated meats. Springhouses, as the name suggests, utilized a flowing spring as the cooling mechanism. These were constructed partially below ground, and a rock or brick-lined drain would be made along the walls of the structure to channel the spring water, which entered through one wall and drained out another. Ceramic jars or bowls were placed in the water-filled drains to cool their contents. This method is well-known for cooling of milk, but would have sufficed for storage of other food items. Sometimes springs would be allowed to flow through the basements of homes for the same use. Even without a flowing spring, food could be kept cool in home basements or separate ground cellars.

When storage in permanent structures was not possible, foodstuff could be stored in pits or trenches dug in yard areas. These pits were often lined with straw or wooden boards, upon which hardy vegetables and fruit were laid, and then covered with additional straw, soil, and occasionally manure to prevent the soil cover from freezing solid in the winter (Long 1972:164). Another temporary storage method was to lay produce directly on the ground and cover with a mound of soil. If it was a large enough mound, it would be ventilated to prevent mold growth at the top through a pipe or at the bottom through a shallow trench (Long 1972:163). Meat could have been stored using either method, if the meat was first protected by a careful wrapping in cloth or storage in sealed ceramic jars.

Within the encampments meat could have been smoked and hung, or potted in earthenware jars, and kept within the dwellings for long-term storage. Consumption of meat within fairly short periods after butchery was likely owing to the purported limited amounts of food being distributed among the entire community. Lack of long-term food storage facilities, such as springhouses and root cellars, would also have made consumption of relatively fresh meat necessary. The short-term nature of the camps could have precluded construction of a springhouse, and no evidence of such a structure was found during the archaeological investigations. Additionally, the huts were apparently built on fieldstone foundations without cellars, which would have restricted food storage to within the dwelling, or to root cellar pits placed below the hut floors or in the outlying field or yard areas. Most of the pit features at 36YO46, however, lacked depth and uniform shape characteristic of root cellar pits, and pits that were more uniform in shape were deemed to be small, probable hearth pits (Hunter 1979:5).

Butchery was apparently done primarily through chopping. The implement used is uncertain, but was likely a cleaver. Some marks were classified as failed chop marks, occurring parallel and near to fracture edges, with widths of 0.5 centimeters or greater and occasional bone crushing (*Photo B*). Butchery was minimal, with cuts generally being prepared as large joints or roast cuts, and evidence of bone breakage reflecting further processing for soup stocks. Chop marks demonstrated separation of the head, and division of the carcass into right and left halves. Large joints of beef and mutton (e.g. whole leg cuts) were divided into upper arm/leg cuts, knee/knuckle cuts, and foot/trotter cuts. Additional meat cuts included shoulder, neck, rib roast, loin and brisket or plate cuts. Four pieces of bone were crudely sawn (*Photo C*) suggesting

butchery with a dull tool, and an additional eight possessed marks that could have been produced during chopping or sawing. Hundreds of limb-bone fragments and bone flakes (n=932) indicated intentional breakage, likely before cooking. Pieces of bone that had been broken prior to burning (n=249) also suggested breakage during butchery. Cut marks related to meat removal were evident only on 78 pieces of bone (*Photo D*).



Photo B: Example of Failed Chop Marks



Photo C: Example of Crudely Sawn End of Bone



Photo D: Example of Element with Cutmarks

Meat was likely stewed in pots over open fires or earthen ovens within the encampments. Roasting and boiling were the prevailing methods for cooking meat throughout the 18th century. Food was prepared over hearth fires, either near the fire on a spit with dripping pan placed underneath to catch the fat and juices, or over the flames in a kettle or pan. Brick or stone-lined ovens, and later iron-walled ovens, built into a kitchen wall could also be found in the larger houses of the upper class (Stead 1985:7-8). Camp cooking was generally done over open fires, either in kettles, on heated rocks, or within the ashes of the fire itself. When located in a semi-permanent camp, ovens could be dug into mounds of earth. As an encampment housing potentially hundreds of people, it would also have been more beneficial to prepare large cuts of meat to be used in soups or stews. Butchery methods indicated by the assemblage, and a lack of evidence for brick or stone chimneys or fire-boxes at the camp, supports the likelihood that meat was likely boiled in kettles placed over open fires or within an earthen oven.

Minimum Number of Individual calculations and known meat weights for livestock in the assemblage represented approximately 5000 lbs of meat. A minimum of nine cattle, nine sheep, and three swine were represented in the assemblage. The amount of meat obtained from butchered cattle is generally observed as 45% of the liveweight or 75% of the dressed weight, the amount from swine is observed as approximately 47% of the liveweight or 63% of the dressed weight, and the amount from sheep is observed as approximately 44% of the liveweight or 47% of the dressed weight. Additional edible parts, which are known as offal cuts and include the heart, tongue, brains and liver, represent another 12% of the liveweight for each animal. Late 18th century accounts noted a general weight of 500 lbs dressed for cattle after slaughter, a live weight of 200 lbs for swine at time of slaughter, and sheep at 60 lbs (12-15 lbs per quarter) dressed (Bidwell and Falconer 1925:108-111). The amount of meat and offal obtainable at that time would have been approximately 475 lbs from the average cattle, 118 lbs from the average swine, and 40 lbs from the average sheep. Consequently, the minimum number of cattle, sheep, and swine represented in the assemblage could have provided over 4200 lbs of beef, 350 lbs of pork, and 360 lbs of mutton.

Were They Starving?

Perceptions of food supply by the prisoners and staff at the camp were likely influenced by their pre-war dietary standards. Meat was a prominent part of every meal during the late 18th century in America and England. Dishes were made from all parts of the animal. Meat from boiled calf's and lamb's head, tongue, oxtails, and roasted tripe were common recipes, and at least one recipe for roasted udder, done in the same way as roasted tongue, was provided in the widely-circulated "The Art of Cookery Made Plain and Easy" (Glasse 1774:11). Bread items were commonly served with the meat dishes, while fruits and vegetables were consumed in minor amounts, if at all. The downside to this meat-rich diet was the common occurrence of gout, scurvy and heart disease (Shephard 2000:210, Stead 1985:26).

Typical food rations for Continental and British soldiers during the war reflected the contemporary reliance upon meat and breadstuffs. Food rations for both armies included beef, pork, fish, bread, vinegar, salt and small amounts of vegetables when available. Continental soldiers were to receive approximately 1 lb of beef or $\frac{3}{4}$ lb pork, or 1 lb of fish per day, as well as one pound of bread or flour, and $\frac{1}{2}$ pint of peas or beans (Rees 2004:622-624). British soldiers were to receive 1 lb of beef or 9 oz of pork, 1 lb of flour or bread, and $\frac{3}{7}$ pint of peas (ibid). The number of calories provided by such rations would have ranged between 2300 and 3000 per day, which could have been enough depending upon activity level, as well as factors like age and weight (Nutribase 2001). For example a 25 year old male weighing 165 lbs requires approximately 1600 calories per day at rest, with activity like walking cross-country for even 6 hours of the day increasing the need to approximately 2600 calories per day, with a full haversack the caloric need could increase to over 3,000 per day (www.caloriesperhour.com).

Distribution of those rations was not always possible, however. Delivery of provisions was often hindered by difficult transportation over land and waterway routes, as well as a lack of wagons to cart the food and other equipment. The Continental Congress attempted to alleviate the situation by having each state supply resources for the military forces within their boundaries. An advertisement in the Boston Gazette dated October 16, 1780, for example, noted the General Court had ordered the "several Towns in this State... to furnish a Quantity of Beef for the Use of the Army, or to pay so much money as... may be sufficient to purchase the same" (in Andrlik 2012:297). Food supply remained a problem, however, especially for traveling troops. Encampments that were built to be permanent or semi-permanent were more capable of maintaining a reliable level of provisions. For example, Captain Samuel Dewees noted in his memoir that troop provisioning while on the move involved drawing more meat than bread, which was more readily available near towns with bakeries, drawing more liquor than vinegar when near large towns, and still other times having only ships biscuit and herring with the result being an outbreak of scurvy (Hanna 1844:178-179). While encamped at West Point, however, Dewees recalled many cattle of varying quality being slaughtered, and at least one instance of about a hundred sheep being driven into the slaughterhouse (Hanna 1844:158, 164).

Food supply at York and Camp Security, though, was referred to only a few times in historical records for the camp. Shortly after the establishment of the camps, General William Irvine wrote to Pennsylvania's President Joseph Reed that the Continental troops at York Town were lacking in clothing, equipment and food supplies (General Irvine August 9th 1781 in Pennsylvania

Archives 9:345-346). In November of 1782 Lt. Patrick Crichton wrote of the ultimatum presented to the prisoners after Brigadier General Hazen took over administration of the camp; prisoners residing in the surrounding community were given the choice of forfeiting their rations, to remain in the community, or forfeiting their parole and returning to the stockade (Crichton 1782 in British Headquarters Papers of Sir Guy Carleton). Insufficient provisioning and lodging was also a problem for Continental soldiers at the time; in December of 1782, dragoons escorting new prisoners to the camp were lodged and fed in the houses of local citizens, owing to the poor condition of the soldier's barracks (York Moravian Diaries in Spangler 1896:524).

Based upon historical records for the camp, 18th century dietary standards, and the quantity of meat indicated by the faunal assemblage, prisoners at the camp may not have received what they would have considered an adequate supply of meat. Rationing of food supplies would, of course, have been largely dependent upon the number of people residing in the encampments. By the spring of 1782, approximately 600 prisoners were settled in the encampments, but parole policies, and subsequent escapes afforded by parole, could have greatly decreased the number of prisoners in residence (Stayer 1981:24; Continental Congress 3 July 1782). Approximately 5000 lbs of meat was represented in the assemblage based upon MNI calculations and known meat weights. Assuming this sum was consumed over the entire 22 month period, an average of 7 lbs of meat would have been consumed per day, which would have been stretching the rations for even a group of 50 prisoners. Boiling meat was noted by contemporary authors on food chemistry to make it more easily digested and more nourishing, and to make "the allowance go much farther than it would otherwise do" (Blair 1798:27-28). Hundreds of limb-bone fragments and bone flakes in the assemblage attested to extreme breakage of arm or leg portions, which would have increased the nutritional value of these elements by providing more marrow and grease within soup stocks. More than likely meat was not consumed on a daily basis at Camp Security and Camp Indulgence, and its rationing was extended as an ingredient in soup stocks or other multi-ingredient meals.

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