

BRIEF NOTE

FAUNAL REMAINS FROM THE EATON (HOPEWELL) FURNACE SITE¹

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OHIO J. SCI. 81(3): 138, 1981

The Eaton (Hopewell) Furnace site is located in Poland Township, Ohio, approximately midway between the communities of Struthers (on the north) and Poland (on the south). Specifically, the furnace site is situated midway down the steep western side of the gorge on a natural talus shelf overlooking Yellow Creek. Built in 1802, the furnace was blown in 1803 and lasted until about 1808, when due to problems brought on by the general inefficiency of the process and the production of a poor quality cast iron, it went out of blast (White 1980). This early Ohio smelting operation was the first blast furnace west of the Allegheny Mountains and the first industry of any kind in the Western Reserve. In addition, materials collected during archaeological excavations in 1975, 1976, and 1977 indicate that the furnace used a fuel composed of charcoal in combination with raw bituminous coal thirty years earlier than its as yet substantiated use in this way anywhere else in the New World (White 1977, 1978).

Along with thousands of artifacts including ceramics, cutlery, tools, utensil fragments, cast iron furnace products, etc., a total of 129 bones and bone fragments were recovered from the Eaton (Hopewell) site during the course of archaeological excavations. The state of preservation ranged between excellent and very poor. These faunal remains were distributed unevenly among mammalian and avian taxa which included *Bos taurus* (n=14), *Sus scrofa* (n=47), *Equus caballus* (n=7), *Odocoileus vir-*

ginianus (n=3), *Canis familiaris* (n=1), *Didelphis marsupialis* (n=1), and non-specific *Aves* (n=16). In addition, 24 bone fragments were recovered which, though identified as to their anatomical name, could not be identified as to taxon. Twenty-six bone fragments were too minute or weathered to allow even the ascertainment of anatomical name. Ribs (n=24) and teeth (n=28) were the most frequently recovered bone materials; 14 of the ribs were unidentified as to species while 26 of the teeth were identified as *Sus scrofa* (see table 1).

The distribution of faunal material throughout the site was limited. Of the 129 bones or bone fragments, 107 (82.9%) were found at various levels within the structural feature designated as the remains of Eaton Furnace ironmaster's house. This structure was located on a small (2 acres) flat floodplain on the bend of Yellow Creek, across the headrace and approximately 76 m from the furnace itself (fig. 1). The remaining 22 bones (17.11%) all came from the casting floor area adjacent to the furnace.

In addition to providing 82.9% of the total bone inventory, the ironmaster's house contained all of the cow, pig, deer, dog, and opossum remains. Within the perimeters of the ironmaster's house 44% (47) of the material came from the floor and fill of Unit B₂—one of five room units. The remainder of the faunal material was divided fairly evenly between Units A, C, D, E, and F (see fig. 2).

A tabulation of faunal remains indicates that the minimum number of individuals of the taxa represented are 4 cows, 2 pigs, 2 birds, 1 horse, 1 deer, 1 opossum and 1 dog. While strict

¹Manuscript received 5 December 1979 and in revised form 16 July 1980 (#79-57).

TABLE 1
*Faunal remains.**

Bone	Fre- quency	Anatomical Specifics	% Total
Bos taurus (cow)			
ulna	4	4 left proximal. 3 show saw marks from butchering	
rib	3	2 proximal. 1 medial	
scapula	1	glenoid cavity	
vertebra	1	lumbar	
tibia	1	proximal	
mandible	4	4 splinters	
Total—	14		10.9
Sus scrofa (pig)			
teeth			
I ² /	1		
I ³ /	1		
C	3		
P ² /	1		
P ³ /	2		
P ⁴ /	2		
M ¹ /	3		
M ² /	3		
M ³ /	3		
M ⁴ /	1		
M ¹	2		
P ⁴	2		
C	2		
mandible	9	2 right; 1 left; 1 ramus; 5 splinters	
maxilla	1	partial anterior	
vertebra	2	1 axis (2nd cervical vertebra)	
rib	6	2 proximal; 4 medial	
scapula	1	partial glenoid cavity	
tibia	2	2 distal	
Total—	47		36.4
Equus caballus (horse)			
phalanx	2	1 intermediate; 1 proximal	
mandible	1	left	
teeth			
M ² /	1		
M ³ /	1		
femur	1	proximal head frag.	
rib	1	proximal	
Total—	7		5.4
Odocoileus virginianus (white-tailed deer)			
tibia	1	distal	
humerus	2	distal	
Total—	3		2.3
Canis familiaris (dog)			
ulna	1	proximal	
Total—	1		0.8

TABLE 1. *Continued.*

Bone	Fre- quency	Anatomical Specifics	% Total
Didelphis marsupialis (opossum)			
humerus	1	right	
Total—	1		0.8
Avifauna (nonspecific bird)			
tibia	2	1 left; 1 right. Small robin-size birds	
femur	2	1 right; 1 left. Left femur from chicken-size bird	
radius	2	1 left; 1 right — small birds	
Total—	6		4.7
Unknown (as to species)			
rib	14	11 medial; 3 proximal. One medial may be deer	
femur	3	3 distal head frags. Bos or Equus (?)	
scapula	1	Sus scrofa (?)	
tibia	1	distal. Medium-sized animal	
mandible	1	splinter	
vertebra	4	1 body frag. Bos or Equus (?)	
Total—	24		18.6
Non-diagnostic frag.			
	26	17 long bone splinters—2 long bone medials; 7 minute frags.	20.2

*Total faunal remains: 129 bones or bone fragments.

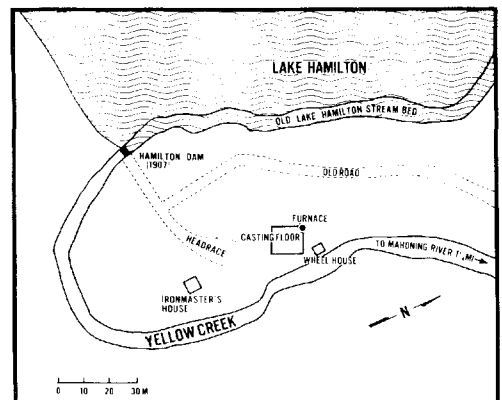


FIGURE 1. Map showing the relationships of the major features of the Eaton (Hopewell) Furnace site.

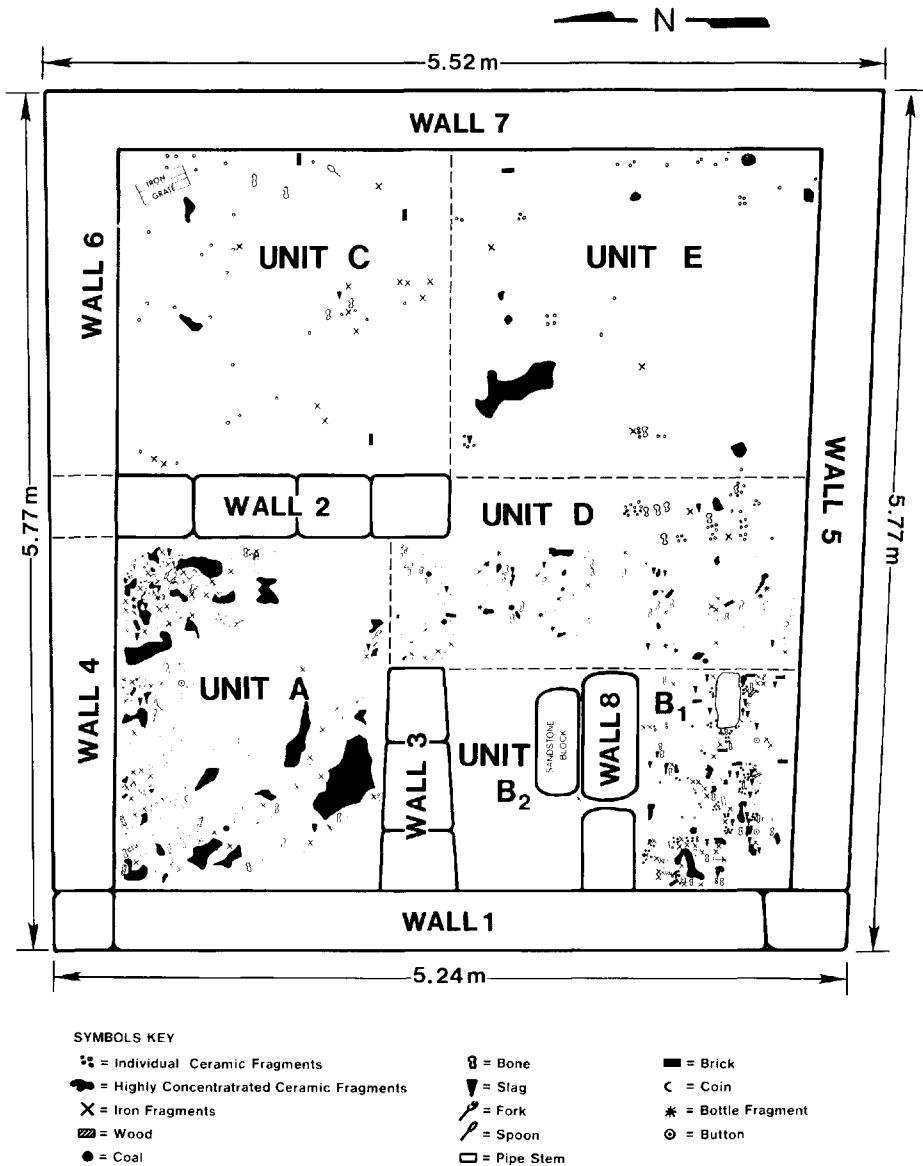


FIGURE 2. Plan view drawing of the remains of the ironmaster's house showing the various units and the bone and other cultural materials found therein.

adherence to bones present dictates a minimum of one *E. caballus* for the site, when consideration is given to the horizontal placement and stratigraphic provenience of the specimens, as well as the skeletal part, a minimum of two animals seems more likely. From the floor and fill of the ironmaster's house, 4 *E. caballus* bones were recovered and

hence are early (1802-1808); and 3 were recovered from the top 20 cm of the casting floor area, representing a post site abandonment date (after 1808). It seems probable that we found the remains of at least two horses. The post-1808 horse remains may well come from the 1906-1907 period. It was at this time that nearby Hamilton Dam

was erected and horses would have played an important role in the extensive hauling and construction activities associated with it.

Of the total remains, only 3 definitely showed signs of butchering. These were 3 left proximal ulnae fragments of cow bearing deep striations characteristic of rough saw butchering. Saw cut location and orientation was similar to that demonstrated for cow ulnae recovered from the Fort Walla Walla Dump site in Washington and considered common for this bone (Lyman 1977: 68, fig. 3b). Interestingly, the fourth left proximal ulnae bore no such butchering signs. It should be noted that while these ulnae indicate at least 4 individuals, a total of only 14 *Bos* bones were recovered. More would have been expected unless, as may well be the case, the beef was butchered elsewhere and the house occupants expressed a preference for the front left quarter.

The presence of 10 pig mandible and maxilla bones and fragments (at least 2 individuals) and 26 teeth, indicates that these animals were either raised and prepared at the site or, if butchered elsewhere, were brought in with their heads attached. The lack of pig foot bones (phalanges, metapodials, carpals, and tarsals) suggests that pig knuckles or pig's feet were not eaten.

White-tailed deer are somewhat under-represented ($n=3$) for such an early historic site where hunting would be expected to be economically important.

It is probable, even likely, that our faunal counts and their narrow distribution are the result of sampling error. The historic inhabitants of the ironmaster's house, as well as the occupants of any other as yet undiscovered or unexcavated structures in the Eaton Furnace complex, in all likelihood systematically disposed of their refuse

in specific dumping areas. Faunal remains, as well as other pieces of refuse such as broken ceramics, found within the confines of the house likely owe their disposition to chance; *i.e.*, they worked their way into the cracks and recesses of the house floor and cellar and were overlooked at housecleaning time. A careful examination of the area under and around most modern homes clearly demonstrates this tendency toward custodial oversight.

While location and excavation of the house dumping site(s) would yield a far more accurate picture of animal use, preferences, proportions, and butchering techniques employed at this early Ohio industrial site, several things can be deduced, at least tentatively, from the 129 remains recovered:

1. Beef, particularly the front left quarter, and pork were important meat sources;
2. the beef used at the site was butchered elsewhere;
3. deer, surprisingly, did not appear to represent an important food source;
4. horses were utilized during at least two separate periods at the site—during the furnace years (1802–1808) and during the later dam-building phase (1907).

LITERATURE CITED

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