

APPENDIX C
TECHNICAL FAUNAL REPORT

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Introduction

The McKean/Cochran Farm Site yielded 9,529 bone fragments. The faunal assemblage was large and diversified in terms of the range of species represented. Bone was collected from several features as well as from the plowzone. The area is rich in wildlife resources, including mammal, bird, reptile, and fish species. The environment supports a wide range of species that have been exploited for food and other uses during prehistoric and historic times. Therefore, there was a high probability that the faunal record would include the remains of wild species, which would indicate the exploitation of environmental resources by the site's inhabitants over time. During historic times the site was a farm; thus, it was also expected that the faunal record would include the remains of domesticated livestock. Based on these expectations, it was further anticipated that a number of different types of deposits would be identified from which various activities, including dietary consumption practices, hunting, and fishing, could be inferred.

In the discussion that follows, two main units of measure are employed for the faunal assemblage. In describing the Stage 1-level features, the Total Number of Fragments (TNF) count is used, and for the Stage 2-level feature descriptions the Minimum Number of Units (MNU) count is used. The TNF count is always used in discussions of the frequencies of bone modifications, such as cut marks, gnaw marks, heat exposure, and weathering. The TNF count is simply the total number of bone fragments counted by species. This measure does not convey any information about the number of actual bones represented for a species.

The Minimum Number of Units measure is similar to the Number of Identified Specimens (NISP), which quantifies the number of skeletal elements identified for a given species (Grayson 1984; Lyman 1994). However, the MNU differs from the NISP in that it represents a set of types of bone identified by species or size-range category. Types of MNUs are distinguished in the set, such as articulated skeletons (Minimum Number of Individuals, or MNI), skeletal Elements (Minimum Number of Elements, or MNE), articulations or joints composed of skeletal elements (Minimum Number of Articulated Elements), butchered skeletal elements representing meat cuts (Minimum Number of Cuts, or MNC), and/or articulated or jointed meat cuts (Minimum Number of Articulated Cuts) (Azizi et al. 1996). The gross MNU reflects a tally of all types of skeletal material represented in a deposit.

Throughout the discussion the terms *dietary refuse*, *processing waste*, and *butchery waste* appear frequently. These terms are used to describe the nature and composition of the faunal materials recovered from the site. *Dietary refuse* is defined as the remains of animal species typically consumed by people and composed of skeletal elements representing edible parts of the body. Edible parts of the body include most of the postcranial skeletons of large domesticated mammal, bird, fish, and some reptile species. Figures C.1-C.4 (presented following the text for this appendix) provide a visual aid to understanding which parts of large domesticated mammals are considered

dietary materials and which are considered waste materials. The slaughtering and processing of large domesticated mammals, such as sheep, pig, and cattle, was fairly standard. The carcasses of cattle, pig, and sheep were first cut up into large meat sections, referred to here as "butcher cuts." These were then cut into smaller units, referred to here as "meat cuts." The figures illustrate butcher cuts and meat cuts for cattle (beef and veal), pig (pork), and sheep (mutton). For each species, the meat from different parts of the carcass varies in terms of quality and quantity. The ranking of meat cuts indicates the difference in quality, where 1 equals the best in quality and 10 the least in quality (Henry 1987; Huelsbeck 1991; Schmitt and Zeier 1993; Schultz and Gust 1983; Ubaldi and Grossman 1987).

Processing waste is defined as skeletal material that has been discarded during processing for organ meats and marrow extraction. It is often identified by butchered cranial bone from sheep, pig, and cattle, as well as foot bone, usually from calves. Pig's feet are always considered dietary refuse and not processing waste because they were, and continue to be, a commonly eaten food. A good example of processing waste is found in the bone refuse from making head cheese. Head cheese is a dish composed of the meat from calf's head that is bound with gelatin extracted from calf's feet. The processing waste appears as butchered skulls, mandibles, metapodia, and phalanges from immature cattle, or veal. Another example is the processing waste from extracting cattle, or beef, tongue. The processing waste in this case appears as butchered mandibles. There are other examples involving the extraction of the brains and tongues of sheep and pig, as well as waste that occurs from trimming off foot element from the shanks of sheep. In most instances, it is the presence of butchery marks that indicates whether or not these elements represent processing waste.

Butchery waste is defined as the residual, or discarded, skeletal material from the processing of a carcass, and usually consists of the head and feet. There is a certain degree of difficulty in distinguishing between on-site butchery and processing waste based on this definition. However, in general, butchery waste is identifiable when there is a fairly high frequency of head and foot elements in comparison to dietary materials from more than one individual of the same species, as well as head and foot elements from more than one species in the same deposit.

Table C.1 summarizes the faunal material according to the phase of the investigation and the type of unit of excavation. Very little bone was recovered from the Phase I and II excavations; the majority of the bone was found during the Phase III excavations, primarily from within the features. Most of the bone from the Phase I and II excavations consisted of large domesticated mammal species, including cattle, pig, and sheep. There was very little faunal material of interest recovered from the shovel test and plowzone excavations other than a few pieces of small mammal, fish, and bird. Opossum and rabbit were present in STP 34A and chicken in STP 35. One piece of stony coral was present in STP 30. Unit PZ51 contained one piece of stony coral, Unit PZ26 a dog bone, Unit PZ251 a rabbit bone, and Unit PZ60 an unidentified fish bone.

The Phase III excavations yielded a great variety of mammal, bird, reptile, and fish species. Faunal materials were recovered from 17 features. Table C.2 summarizes the species represented in each

Table C.1. Faunal Summary Recovered by Phase and Excavation Unit by Total Number of Fragments (TNF) and Minimum Number of Units (MNU)

PHASE	SHOVEL TESTS		TEST UNITS/ PLOWZONE		FEATURES		TOTAL	
	TNF	MNU	TNF	MNU	TNF	MNU	TNF	MNU
Phase I	281	69	-	-	-	-	281	69
Phase II	98	11	27	11	-	-	125	30
Phase III	-	-	258	55	8,865	3,031	9,123	3,086
Total TNF/MNU	379	80	285	66	8,865	3,031	9,529	3,185

of the Stage 1-level features. The Stage 1 features included the following: Feature 2, an uncompleted cellar; Feature 8, the drain associated with the dairy; Feature 27, a well; Features 30, 31, 55, 58, and 59, all pits; Feature 38, a tree hole; and Features 47, 50, 53, and 56, all postholes. The faunal material recovered from these features is briefly described. Features 1, 4, 15, and 29, the Stage 2-level features, yielded the largest concentrations of bone, and the faunal material recovered from these features is examined in greater detail.

Analysis of Bone from the Stage 1-Level Features

Feature 2, a partially excavated cellar, contained 29 bone fragments (TNF). Cattle and pig were the only identified species, and both were represented by dietary refuse (see Table C.2). Pork meat cuts included a shoulder ham and a ham hock, and beef consisted of a shank. The pork bones exhibited canine gnaw marks.

Feature 8, the drain associated with Feature 15, the dairy, contained 17 bone fragments. These consisted of cattle and medium and large mammal bone (see Table C.2). All of this material was dietary in nature. Beef cuts included roasts from the chuck, loin, and arm. Medium mammal consisted of thoracic vertebrae, probably from pig, and large mammal consisted of unidentified cleaved fragments.

Feature 27, a well, yielded a fairly large faunal deposit, consisting of 253 bone fragments. Almost all of the bone came from mammal, although a small number of bird, fish, and reptile bone fragments were also present (see Table C.2). Identified mammal species included cattle, pig, rabbit, and sheep. Medium and large mammal were the categories represented in the greatest proportions. The bone deposit from this feature was composed of a mix of butchery/processing waste and dietary refuse. Processing waste was evident from the presence of cranial and foot elements from sheep, pig, rabbit, and cattle, as well as from medium and large mammal. Dietary refuse was indicated by a variety of mutton, pork, beef, and veal meat cuts, as well as by butchered fragments of longbone and vertebrae from medium and large mammal. Mutton cuts came from the shank and butt-end of the leg, and pork included a trotter. Beef cuts consisted of the chuck and shank, and veal of a cut from the leg. Throughout this deposit, several bone fragments exhibited canine gnaw marks. A few bone fragments were charred and calcined and a fair number were stained. Bird, fish, and reptile

Table C.2. Summary of Species for Stage 1 Features by Total Number of Fragments (TNF)

SPECIES	F.2 TNF	F.8 TNF	F.27 TNF	F.30 TNF	F.31 TNF	F.38 TNF	F.47 TNF	F.50 TNF	F.53 TNF	F.55 TNF	F.56 TNF	F.58 TNF	F.59 TNF
Mammal													
Cat	-	-	-	-	-	-	-	-	2	-	-	-	-
Cattle	2	3	29	28	-	8	-	-	2	1	-	-	15
Horse	-	-	-	-	-	-	-	-	-	-	-	-	4
Opossum	-	-	-	-	-	-	-	-	-	6	-	-	-
Pig	8	-	17	124	-	14	-	-	3	22	-	5	11
Rabbit	-	-	3	-	-	-	-	-	3	-	-	-	-
Rodent	-	-	-	-	-	1	-	-	2	-	-	-	-
Sheep	-	-	13	3	-	1	-	-	-	5	-	-	1
Small	-	-	4	1	-	1	-	-	5	1	-	-	-
Medium	-	5	110	22	5	17	-	2	19	28	-	3	11
Large	19	9	71	26	10	21	-	-	4	13	-	1	3
Subtotal TNF	29	17	247	204	15	63	-	2	40	76	-	9	45
Bird													
Chicken	-	-	-	-	-	-	-	-	2	3	-	-	-
Duck	-	-	-	-	-	-	-	-	-	-	1	-	-
Goose	-	-	-	-	-	1	-	-	-	-	-	-	-
Small	-	-	2	-	-	-	-	-	-	-	-	-	-
Unidentified	-	-	1	1	1	-	-	-	-	4	-	1	-
Subtotal TNF	-	-	3	1	1	1	-	-	2	7	1	1	-
Fish													
Catfish	-	-	-	-	-	-	-	-	2	-	-	-	-
Unidentified	-	-	2	-	-	-	-	-	-	21	-	-	-
Subtotal TNF	-	-	2	-	-	-	-	-	2	21	-	-	-
Reptile													
Snapping Turtle	-	-	-	-	-	12	-	-	-	5	-	-	-
Unidentified Turtle	-	-	1	11	-	-	2	-	4	-	-	-	-
Subtotal TNF	-	-	1	11	-	12	2	-	4	5	-	-	-
Bone													
Unidentified	-	-	-	-	-	-	-	-	-	1	-	-	-
Subtotal TNF	-	-	-	-	-	-	-	-	-	1	-	-	-
Total TNF	29	17	253	216	16	76	2	2	48	110	1	10	45

remains were not identified by species. All three were present in low frequencies. Reptile was represented by a turtle carapace fragment.

Feature 30, a pit adjacent to Feature 29, also contained a fairly large bone deposit, consisting of 216 fragments. The deposit was composed of mammal, bird, and reptile (see Table C.2). As in Feature 27, mammal bone predominated. Identified species included cattle, pig, and sheep.

The deposit consisted of a mix of butchery/processing waste and dietary refuse. Butchery/processing waste was represented by one pig skull, and cattle by cranial and foot bones. Dietary refuse was composed of a number of meat cuts. Mutton cuts included roasts from the shank and butt-end of the leg. Pork consisted of a single shank ham. Beef cuts were the most varied, and included roasts from the rib and chuck and stew meats from the foreshanks and hindshanks. Other evidence of dietary refuse was indicated by medium and large mammal longbone and vertebrae fragments. Butchering marks included chop and cleaver marks and table cut marks. Bird and reptile were not identified by species. Reptile consisted of fragments of turtle carapace and plastron. One carapace fragment bore cut marks. A small number of bones in the deposit exhibited canine gnaw marks and a few fragments were charred, calcined, or stained.

Feature 31, a pit, contained a small bone deposit, consisting of 16 fragments. This material was composed almost entirely of medium and large mammal (see Table C.2). One unidentified bird fragment was present. Four bone fragments were burned.

Feature 38, a tree hole, contained 76 bone fragments. This feature was composed primarily of dietary refuse, along with small amounts of butchery/processing waste. It was made up of mammal, bird, and reptile species (see Table C.2). Mammal species included cattle, pig, sheep, and an *unidentified rodent species*. Mammal bone consisted of dietary refuse and butchery/processing waste. Dietary refuse was represented by a variety of cuts, including a mutton shoulder roast; pork ham hocks and a picnic ham; and beef stew meats from the chuck and shank and a short rib cut. Other dietary refuse was indicated by medium and large mammal longbone and vertebrae fragments. Butchery/processing waste was present in the form of a butchered pig mandible, cattle teeth, and medium and large mammal skull fragments. Bird and reptile remains also consisted of dietary refuse. Goose was the only bird identified, and was represented by a breast. Reptile species were represented by snapping turtle, consisting of fragments of longbones and carapace. The snapping turtle longbones exhibited cut marks. The deposit included several pieces of bone that exhibited chop marks and table cut marks. A few pieces were either charred or calcined and a few bore canine gnaw marks.

Features 47 and 50, postholes, each yielded two fragments of bone. Feature 47 contained two fragments of an unidentified turtle carapace. Feature 50 contained two medium mammal longbone fragments. None of the bone from either feature exhibited bone modifications.

Feature 53, a posthole, yielded a small bone deposit, consisting of 48 fragments. Although small, the deposit was diversified in terms of the range of species represented. Most of the deposit was composed of mammal bone, including cat, cattle, pig, rabbit, and rodent (see Table C.2). Bird, fish, and reptile remains were also found. The material was almost all dietary refuse, with much of the bone exhibiting table cut marks as well as a few cleaver marks. Unlike the bone from other features discussed above, the gnaw marks observed on the large mammal bone from this feature were made by rodent incisors, not canine teeth. This suggests the presence of rodent scavenging activities. Bird consisted of chicken longbones. Fish was represented by a catfish skull bone. Reptile included

carapace fragments from unidentified turtle. A small number of bone fragments were charred or calcined and a few pieces of bone were stained.

Feature 55, a pit located in Structure B, yielded a fair-sized bone deposit, consisting of 110 fragments. It was composed of mammal, bird, fish, and reptile species. Mammal included cattle, opossum, pig, and sheep. Bird species consisted of chicken, and reptile species consisted of snapping turtle. One of the most notable features of the bone recovered from this feature was the almost complete absence of gnaw marks; gnaw marks were restricted to canine marks on four medium mammal longbone fragments. The deposit represents a mix of butchery/processing waste, dietary refuse, and possible intrusive material. Butchery/processing waste is indicated by cranial and foot bone from sheep, pig, cattle, medium and large mammal, and fish. The sheep cranial bone came from a newborn. Dietary refuse was evident from mutton, pork, and beef meat cuts, as well as from chicken elements. Mutton consisted of a stew cut from the shoulder and hindshank, pork of a shank ham, and beef of a round roast. Components that may have been intrusive include bones of snapping turtle and opossum. None of the skeletal elements from either of these species exhibited butchering or gnaw marks.

Feature 56, a posthole, yielded one fragment of bone. It consisted of a duck wing element that was stained. Feature 58, a pit, contained 10 bone fragments, consisting of nine mammal fragments and one bird fragment.

Analysis of Bone from the Stage 2-Level Features

Four features were selected for intensive, or Stage 2-level, analysis: Features 1, 4, 15, and 29. The two early features (Features 4 and 29) are discussed first, followed by a discussion of the two later features (Features 1 and 15). The comparative unit of measure used for these discussions is the Minimum Number of Units (MNU). Some discrepancies will be apparent between Table C.3 and Tables C.4 through C.7. Table C.3 presents the total MNU counts by species. Tables C.4 through C.7 present body parts distributions for pig, sheep, and cattle. The counts reflected in the latter tables have been adjusted for paired elements as well as for the reduction of the importance of loose teeth. For example, if a pig cranium, three molars, and a partial mandible were present, these would be adjusted to an MNU count of one, whereas four right pig mandibles would remain as an MNU count of four.

Feature 4, a cellar, one of the early features, yielded a fairly large faunal deposit, consisting of 306 MNU (see Table C.3). The deposit was primarily dietary refuse, with small amounts of butchery and processing waste. Mammal, bird, fish, and reptile species were represented. Mammal included a variety of domesticated, exploited, and intrusive species. Domesticated species consisted of cattle, dog, horse, pig, rabbit, and sheep. Exploited species included opossum, raccoon, and squirrel, and intrusive species included rat and other unidentified rodents.

The most frequent mammal species in Feature 4 were cattle, pig, and sheep, with pig the most common. There were 71 pig MNU, adjusted to 25 MNU, representing dietary refuse and processing

Table C.3. Summary of Features 1, 4, 15, and 29 by Species and Minimum Number of Units (MNU)

SPECIES	FEATURE 1		FEATURE 4		FEATURE 15		FEATURE 29	
	MNU	%	MNU	%	MNU	%	MNU	%
Mammal								
Cat	27	2%	-	-	-	-	6	1%
Cattle	165	10%	61	20%	43	21%	72	12%
Cottontail	3	<1%	-	-	-	-	-	-
Deer	1	<1%	-	-	-	-	1	<1%
Dog	4	<1%	1	<1%	1	<1%	3	<1%
Horse	-	-	9	3%	9	5%	-	-
Human	1	<1%	-	-	-	-	-	-
Mink	2	<1%	-	-	-	-	-	-
Muskrat	34	2%	-	-	9	5%	-	-
Opossum	4	<1%	3	1%	1	<1%	1	<1%
Pig	417	24%	71	23%	35	17%	64	10%
Rabbit	22	2%	3	1%	4	2%	9	2%
Raccoon	-	-	1	<1%	2	1%	2	<1%
Rat	83	5%	5	2%	13	6%	11	2%
Rodent	22	2%	2	<1%	2	1%	16	3%
Sheep	83	5%	52	17%	12	6%	34	6%
Squirrel, Fox	7	<1%	1	<1%	-	-	-	-
Squirrel, Gray	11	1%	-	-	1	<1%	-	-
Woodchuck	2	<1%	-	-	-	-	-	-
Small	72	4%	6	2%	5	2%	15	3%
Medium	118	7%	17	5%	10	5%	36	6%
Large	15	1%	5	2%	6	3%	5	<1%
Subtotal MNU	1,093	64%	237	77%	153	74%	275	44%
Bird								
Blue Jay	8	<1%	-	-	-	-	-	-
Chicken	110	6%	11	4%	19	9%	53	9%
Duck	22	2%	5	2%	-	-	-	-
Goose	48	3%	2	<1%	2	1%	15	3%
Pigeon	18	1%	4	1%	1	<1%	11	2%
Red-bellied Woodpecker	2	<1%	-	-	-	-	-	-
Turkey	8	<1%	-	-	-	-	3	<1%
Unidentified	111	6%	10	3%	9	4%	25	3%
Subtotal MNU	327	19%	32	10%	31	15%	107	17%
Fish								
Catfish	58	3%	6	2%	11	5%	11	2%
Cod	-	-	-	-	-	-	1	<1%
Drum	1	<1%	-	-	-	-	-	-
Salmonid	-	-	1	<1%	-	-	-	-
Shad	53	3%	7	2%	-	-	2	<1%
Striped Bass	15	1%	-	-	-	-	-	-
Unidentified	127	7%	19	6%	2	1%	218	35%
Subtotal MNU	254	15%	33	11%	13	6%	232	38%

Table C.3 continued

SPECIES	FEATURE 1		FEATURE 4		FEATURE 15		FEATURE 29	
	MNU	%	MNU	%	MNU	%	MNU	%
Blanding's Turtle	-	-	1	<1%	4	2%	-	-
Box Turtle	3	<1%	-	-	3	2%	-	-
Pond Slider	-	-	-	-	2	1%	-	-
Snapping Turtle	12	1%	-	-	-	-	1	<1%
Soft-shell Turtle	1	<1%	-	-	-	-	-	-
Unidentified Turtle	10	<1%	2	1%	-	-	4	<1%
Subtotal MNU	26	1%	3	1%	9	5%	5	<1%
Bone								
Unidentified	2	<1%	1	<1%	-	-	-	-
Subtotal	2	<1%	1	<1%	-	-	-	-
Total TNF	1,704	100%	306	100%	206	100%	619	100%

Table C.4. Summary of Pork Butcher Units (SBC) and Meat Cuts (RMC) for Features 1, 4, 15, and 29 by Minimum Number of Units (MNU)*

BUTCHER UNIT	MEAT CUT	RANK	FEATURE 1		FEATURE 4		FEATURE 15		FEATURE 29	
			MNU	%	MNU	%	MNU	%	MNU	%
Shoulder										
	Boston Butt	3	26	19%	4	16%	1	5%	6	17%
	Picnic Ham	4	11	8%	4	16%	2	10%	2	5%
	Subtotal		37	27%	8	32%	3	15%	8	22%
Ham										
	Butt Ham	1	10	7%	2	8%	3	15%	6	17%
	Shank Ham	4	20	15%	3	12%	4	20%	7	19%
	Subtotal		30	22%	5	20%	7	35%	13	36%
Loin										
	Rib End	2	14	10%	-	-	-	-	1	3%
	Loin End	2	11	8%	1	4%	2	10%	3	8%
	Subtotal		25	18%	1	4%	2	10%	4	11%
Other Body Parts										
	Head	6	14	10%	4	16%	2	10%	6	17%
	Hock	6	6	4%	2	8%	4	20%	2	5%
	Trotter	6	25	19%	5	20%	2	10%	3	8%
	Subtotal		45	33%	11	44%	8	40%	11	30%
Total MNU			137	100%	25	100%	20	100%	36	100%

*Excludes neonates

Table C.5. Summary of Beef Butcher Units (SBC) and Meat Cuts (RMC) for Features 1, 4, 15, and 29 by Minimum Number of Units (MNU)

BUTCHER UNIT	MEAT CUT	RANK	FEATURE 1		FEATURE 4		FEATURE 15		FEATURE 29	
			MNU	%	MNU	%	MNU	%	MNU	%
Chuck										
	Neck	8	11	13%	5	13%	3	10%	7	15%
	Chuck/Blade	5	14	16%	4	10%	5	18%	7	15%
	Arm	6	3	4%	1	3%	4	14%	2	4%
	Foreshank	9	5	6%	1	3%	1	4%	3	7%
			Subtotal 33	39%	11	29%	13	46%	19	41%
Prime Rib										
	Rib	2	6	7%	1	3%	2	7%	1	2%
	Short Rib	6	-	-	1	3%	-	-	1	2%
			Subtotal 6	7%	2	6%	2	7%	2	4%
Plate										
	Plate	7	-	-	-	-	-	-	5	10%
			Subtotal -	-	-	-	-	-	5	10%
Loin										
	Loin	1	4	5%	-	-	2	7%	3	7%
			Subtotal 4	5%	-	-	2	7%	3	7%
Round										
	Sirloin	2	-	-	2	6%	1	4%	1	2%
	Rump	4	7	8%	5	13%	1	4%	2	4%
	Round	3	3	3%	4	10%	2	7%	4	9%
	Hindshank	9	16	19%	8	20%	2	7%	3	7%
			Subtotal 26	30%	19	49%	6	22%	10	22%
Other Body Parts										
	Head	9	4	5%	2	6%	1	4%	4	9%
	Foot	10	12	14%	4	10%	4	14%	3	7%
			Subtotal 16	19%	6	16%	5	18%	7	16%
Total MNU			85	100%	38	100%	28	100%	46	100%

waste. Processing waste consisted of four butchered skulls (see Table C.4). Dietary refuse was indicated by a wide variety of cuts, most of which represented hams or roasts from the shoulder and ham, as well as a few chops from the loin. Stew meats were also present, including trotters and ham hocks. There were 61 cattle MNU, adjusted to 38 beef MNU and 2 veal MNU. Cattle was represented by dietary refuse, processing waste, and butchery waste. Dietary refuse consisted of a variety of meat cuts, including roasts and stew meats from the chuck and round as well as a few steaks from the prime rib. Veal was represented by a leg roast and stew meat from the shank. Processing waste consisted of butchered mandibles and metapodials. Butchery waste was also present, although in small amounts, and consisted of toe bones. There were 52 sheep MNU, adjusted to 22 MNU, representing dietary and processing waste (see Table C.7). Processing waste consisted

Table C.6. Summary of Veal Butcher Units (SBC) and Meat Cuts (RMC) for Features 1, 4, 15, and 29 by Minimum Number of Units (MNU)

BUTCHER UNIT	MEAT CUT	RANK	FEATURE 1		FEATURE 4		FEATURE 15		FEATURE 29	
			MNU	%	MNU	%	MNU	%	MNU	%
Shoulder										
	Chuck	4	1	11.1%	-	-	-	-	-	-
	Foreshank	6	2	22.2%	1	50%	2	100%	-	-
		Subtotal	3	33.3%	1	50%	2	100%	-	-
Leg										
	Leg	2	2	22.2%	1	50%	-	-	2	67%
		Subtotal	2	22.2%	1	50%	-	-	2	67%
Other Body Parts										
	Head	6	3	33.3%	-	-	-	-	1	33%
	Foot	7	1	11.1%	-	-	-	-	-	-
		Subtotal	4	44.4%	-	-	-	-	1	33%
Total MNU			9	100%	2	100%	2	100%	3	100%

Table C.7. Summary of Mutton Butcher Units (SBC) and Meat Cuts (RMC) for Features 1, 4, 15, and 29 by Minimum Number of Units (MNU)

BUTCHER UNIT	MEAT CUT	RANK	FEATURE 1		FEATURE 4		FEATURE 15		FEATURE 29	
			MNU	%	MNU	%	MNU	%	MNU	%
Shoulder										
	Chuck	4	4	8%	2	9%	-	-	2	8%
	Foreshank	7	18	34%	6	27%	6	67%	5	20%
		Subtotal	22	42%	8	36%	6	67%	7	28%
Bracelet										
	Rack	1	5	9%	2	9%	-	-	1	4%
		Subtotal	5	9%	2	9%	-	-	1	4%
Loin										
	Loin	1	5	9%	1	5%	1	11%	4	16%
		Subtotal	5	9%	1	5%	1	11%	4	16%
Leg										
	Butt End	4	5	9%	4	18%	-	-	6	24%
	Shank End	3	8	16%	1	5%	-	-	3	12%
	Hindshank	7	3	6%	4	18%	1	11%	2	8%
		Subtotal	16	31%	9	41%	1	11%	11	44%
Other Body Parts										
	Head	7	5	9%	2	9%	1	11%	2	8%
		Subtotal	5	9%	2	9%	1	11%	2	8%
Total			53	100%	22	100%	9	100%	25	100%

of two skulls and mandibles. One of the mandibles bore butcher marks. There were roasts and stew meats from the shoulder and leg as well as a few chops from the bracelet and loin. Shank cuts predominated, followed by roasts from the butt-end of the leg.

Some of the other mammal species from Feature 4, including opossum, rabbit, and horse, also exhibited butcher marks. Opossum was represented by the skull, forelimb, and upper hindlimb. Rabbit consisted of the forelimb and hindlimb. Horse skeletal elements with butcher marks included the head and metapodials. Dog, rat, squirrel, and raccoon did not exhibit butcher marks.

The bird species identified in Feature 4 included chicken, duck, goose, and carrier pigeon (see Table C.3). Chicken was the most frequent species. All of the bird species were represented by edible body parts. With the exception of a duck bill and three chicken metatarsi, no evidence of bird processing was noted. Identified fish species included catfish and shad. A salmonid species, probably trout, was also present. All of the fish remains represented processing waste. They were composed of skull, scales, and fins. Turtle species consisted of Blanding's turtle. This edible species was represented by carapace fragments.

Feature 4 bone modifications included gnaw marks, heat exposure, butcher marks, and weathering (Table C.8). Gnaw marks were frequent. They were present on 20 percent of the bone and included both rodent and canine gnaw marks. Evidence of heat exposure, or burned bone, was infrequent. There was more charred bone than calcined bone. Butcher marks were very frequent, being present on 44 percent of the bone. In general, the butcher marks can be categorized as cleaver, chop, and slice marks. Weathering was also frequent and consisted primarily of stains on the bone fragments.

Feature 29, a well, the other early feature to be discussed, yielded a large and diversified faunal deposit, consisting of 619 MNU (see Table C.3). The deposit was composed of a mix of dietary refuse, processing waste, and butchery waste, and included mammal, bird, fish, and reptile species. Mammal species were the most frequent, and included domesticated, exploited, and intrusive species. Domesticated species included cat, cattle, dog, pig, rabbit, and sheep (see Table C.3). Potentially exploited species included opossum, raccoon, and deer. Intrusive species consisted of rat.

The most common mammal species in Feature 29 were pig, cattle, and sheep (see Table C.3). Pig consisted of 64 MNU, representing 36 adjusted MNU. It was composed of dietary refuse and processing waste. Dietary refuse consisted of several roasts from the shoulder and ham, as well as stew meats, such as hocks and trotters (see Table C.4). Processing waste was evident from six paired mandibles and possibly associated skulls that exhibited butcher marks. There were 72 cattle MNU, representing 49 adjusted MNU. There was a mix of beef and veal dietary refuse and processing waste. Beef included large cuts of meat from the chuck, prime rib, plate, loin, and round. Processing waste consisted of butchered skull and mandibles. Veal included two leg roasts and a butchered skull. There were 34 sheep MNU, representing 25 adjusted MNU. Almost all of this material was dietary (see Table C.7). Meat cuts were predominantly roasts and stew meats from the

Table C.8. Summary of Bone Modifications by Type, Feature, and Total Number of Fragments (TNF)

BONE MODIFICATION TYPE	FEATURE 1 TNF	FEATURE 4 TNF	FEATURE 15 TNF	FEATURE 29 TNF	ALL OTHER FEATURES TNF
Gnaw Mark					
Presence	22	7	10	6	14
Rodent	261	23	5	7	12
Canine	108	29	16	59	62
Canine and Rodent	1	-	-	10	-
Total TNF	392	59	31	82	88
Heat Exposure					
Presence	3	-	-	1	-
Charred	19	26	44	25	30
Calcined	144	3	7	81	19
Polished	-	-	-	-	2
Total TNF	166	29	51	107	51
Butcher Mark					
Sawed	1	-	8	4	-
Bisected	15	2	6	10	2
Slice/Table Cut Marks	107	62	60	96	39
Chopped	98	46	57	90	29
Cleaved	75	18	28	107	17
Quartered	8	5	6	7	1
Total TNF	181	133	165	314	88
Weathering					
Presence	18	1	3	3	13
Flaking Cortex	15	1	-	-	1
Stained	251	88	13	168	87
Total TNF	284	90	16	171	101

shoulder and leg. There were also a few chops from the bracelet and loin. Processing waste was indicated by a single mandible.

Feature 29 had a small range of bird species, including chicken, goose, pigeon, and turkey (see Table C.3). Chicken was the most frequent species. Each of these species was represented primarily by edible body parts. A few metatarsi suggest the presence of processing waste resulting from the cleaning of bird carcasses. Identified fish species were limited to catfish, cod, and shad, all of which were represented by skull elements. Most of the unidentified fish consisted of skull, fin, and scale elements. Unlike Feature 4, this deposit also contained a small number of fish vertebrae. Reptile species included snapping turtle. Both snapping turtle and unidentified turtle were represented mainly by carapace fragments.

Bone modifications present on the bone from Feature 29 included gnaw marks, heat exposure, butcher marks and weathering (see Table C.8). Gnaw marks included a small number of bones with rodent gnawing as well as some fragments with both canine and rodent gnawing. Most of the gnawed fragments exhibited canine gnaw marks. A fairly large number of fragments were heat exposed. One hundred and seven TNF were either charred or calcined. Butcher marks were present on at least 50 percent of the bone in the deposit. These included saw, chop, cleaver, and slice marks. Saw marks were less frequent than the other types. Weathering was also common, and consisted primarily of staining.

The bone deposits from the two early features were similar in terms of the range of species and types of skeletal compositions represented. Domesticated livestock was the most common group represented. Exploited mammal, fish, and reptile species were present in low frequencies. In addition, the methods used for butchering carcasses were basically the same. Most of the meat cuts represented consisted of large cuts of meat that had been cleaved or chopped.

Feature 1, the later cellar, contained the largest of the site's deposits. It yielded 1,704 MNU, and was composed of a mix of dietary refuse, processing waste, and butchery waste. A wide range of mammal, bird, fish, and reptile species were represented (see Table C.3). Mammal species included domesticated, exploited, and intrusive species. Domesticated species consisted of cat, cattle, dog, pig, rabbit, and sheep. Of these, cat and dog are commensal species. Possibly exploited mammal species included cottontail, mink, muskrat, opossum, raccoon, squirrel, and woodchuck. Of these, only mink bore any obvious butcher marks. These small mammals were composed of cranial and postcranial skeletal elements. The large variety of species and their associated skeletal elements suggest active exploitation of these species as opposed to accidental inclusion in the deposit. Intrusive species were present in the form of rat.

In Feature 1, large domesticated mammal species predominated. Pig was the most frequent species. There were 417 MNU, representing 137 adjusted MNU. They were composed of dietary refuse and processing waste. Pork cuts included several roasts and hams from the shoulder and ham, as well as stew meats from the hocks and trotters (see Table C.4). Processing waste was indicated by several skulls and paired mandibles exhibiting butcher marks. There were 165 cattle MNU, representing an adjusted 94 MNU. Cattle included dietary refuse, processing waste, and butchery waste. Beef meat cuts included roasts and stew meats from the chuck and round. Veal meat cuts also included roasts and stew meats, from the shoulder and leg. Processing waste was indicated by butchered cranial bone. Butchery waste was evident in the form of foot bones. Sheep consisted of 83 MNU, representing 53 adjusted MNU. Mutton consisted of a preponderance of stew meat cuts from the shanks, as well as a few chops from the bracelet and loin and roasts from the leg and shoulder. A number of mandibles and skulls not exhibiting butcher marks from brain or tongue extraction suggest butchery waste.

There was a wide range of bird species identified in Feature 1, both species raised or exploited for food and nonexploited species (see Table C.3). Food-related species included chicken, duck, goose, pigeon, and turkey. Non-food-related species included blue jay and red-bellied woodpecker, both

of which were present in low frequencies. All of the edible species were represented by both edible body parts and processing waste from the removal of heads and feet. Blue jay consisted of a full range of skeletal elements, whereas the red-bellied woodpecker consisted of a foot element. A limited range of fish species was represented, including catfish, drum, shad, and striped bass. Catfish and shad were more frequent than the other fish species. Reptile species consisted of box turtle, snapping turtle, and soft-shell turtle. Although box turtle is not considered to be an edible species, the other two species are edible. All of these species were represented by longbone and turtle shell fragments. A few of the turtle longbones exhibited cut marks.

Bone modifications identified in Feature 1 included gnaw marks, heat exposure, butcher marks and weathering (see Table C.8). Gnaw marks consisted of a high frequency of rodent marks and a lower frequency of canine marks. Evidence of heat exposure included a small number of charred fragments and a fair number of calcined fragments. Butcher marks included fairly high frequencies of chop, cleaver, and slice marks and a low frequency of saw marks. Finally, weathering was primarily indicated by several stained bone fragments and a low frequency of surface-exposed bone.

Feature 15, the dairy, and the second of the later features to be discussed, yielded a fair-sized faunal deposit, consisting of 206 MNU (see Table C.3). It was composed primarily of dietary refuse and processing waste, and a small amount of butchery waste. The deposit contained mammal, bird, fish, and reptile species. Mammal species included domesticated, exploited, and intrusive species. Domesticated species consisted of cattle, dog, horse, pig, rabbit, and sheep. Dog was the only species not associated with diet. Exploited mammal species included opossum, muskrat, and squirrel, and the intrusive species was rat.

In Feature 15, large domesticated mammal species predominated. There were 35 pig MNU, representing 20 adjusted MNU. The material was composed of dietary refuse and processing waste. There was a high frequency of cuts from the ham and lower frequencies of cuts from the shoulder, loin, and feet (see Table C.4). Processing waste was indicated by cranial bone. Cattle consisted of 43 MNU, representing 30 adjusted MNU. It was represented by dietary refuse and butchery waste. There was a high frequency of beef meat cuts from the chuck and lower frequencies from the prime rib, loin, and round (see Table C.5). In addition, two veal cuts from the shoulder were present (see Table C.6). Butchery waste was indicated by loose teeth and four foot bones. Sheep consisted of 34 MNU, representing nine adjusted MNU. Dietary refuse predominated, and was composed of a high frequency of cuts from the shoulder, one cut from the loin, and one cut from the leg. In addition, a single skull was identified, with horn stubs attached. Besides pig, cattle, and sheep, horse was present in the deposit. It was composed of two mandibles and teeth. The mandibles exhibited chop and slice marks that indicated the removal of the tongue for consumption. None of the small mammals showed signs of having been butchered. This does not mean, however, that they were not eaten or exploited for fur.

Bird species from Feature 15 were limited to chicken, goose, and pigeon. Chicken was the only species that was well represented (see Table C.3). It consisted of skull, feet, and edible body parts. One femur bore slice marks. Fish species consisted of catfish. Almost all of the fish bones were

from the skull, although there was one vertebra and one scale. Reptile was represented by three species of turtle, including Blanding's turtle, box turtle, and pond slider. Except for the box turtle, these are edible species. Almost all of the turtle bone consisted of turtle shell fragments, none of which exhibited butcher marks.

Bone modifications in Feature 15 included gnaw marks, heat exposure, butcher marks, and weathering (see Table C.8). Gnaw marks were infrequent, and consisted of rodent and canine marks. Heat exposure included a fair number of charred fragments and a small number of calcined fragments. Butcher marks were present in high frequencies (on 80 percent of the bone), and included saw, chop, cleaver, and slice marks. Weathering was infrequent and was limited primarily to staining on a few fragments.

Summary and Interpretation

The examination of faunal deposits from early and late features revealed that, overall, there are few differences and many similarities between the deposits. The most obvious difference is the greater range of mammal, bird, and reptile species present in the later features. The most interesting small mammal to appear in the later features is muskrat. This species is recognized as a regional Delaware dietary specialty. The greater range in bird species, however, is due to the presence of blue jay and woodpecker in Feature 1. Neither of these species is used as a food source. However, it is possible that they were caught for their plumage or were intrusive to the deposit. Turtle species were also more varied in the later deposits. For the most part, they were represented by turtle shell fragments and an occasional longbone. The presence of slice marks on some of the bone indicated that turtles were not accidental inclusions.

There are numerous similarities between the earlier and later deposits. During both time periods the most important sources of meat were pig, cattle, and sheep. Bird species were also important dietary components. Chicken, goose, and pigeon were consistently present in all deposits. Duck and turkey were less well represented. The presence of fish was limited to a few species. Catfish and shad were observed in both time periods. Catfish was the most common fish species found throughout the deposits.

The butchered remains of the large domesticated mammals were similar between the two periods. Pig and cattle were more common than sheep. All three species, however, were butchered into large meat cuts by chopping and cleaving. Saw marks were almost nonexistent on bone from the site. The lack of small meat cuts for most of the mammal bone indicates that the types of meat dishes prepared were meant to serve several people at once. In addition to the pig, cattle, and sheep, horse was also butchered at the site, although low frequencies of bone from horse were present. Butchered mandible bone was recovered for all four species, indicating that tongue was extracted for food. The skulls of calves, pigs, and sheep were also found butchered. Although some butchery waste was present, in the form of foot elements, for cattle, sheep, and horse, it was present overall in low frequencies, implying that the animals were slaughtered elsewhere and were then trimmed somewhere nearby on the site.

The faunal assemblage from the McKean/Cochran Farm Site showed a consistent pattern of behavior on the part of the occupants over time. During both the early and the later time periods, a heavy reliance was placed on domesticated livestock for food. However, the presence of a wide range of wild mammal, bird, fish, and reptile species also shows that the local environment was exploited through hunting or trapping, and through fishing, to supplement the diet.

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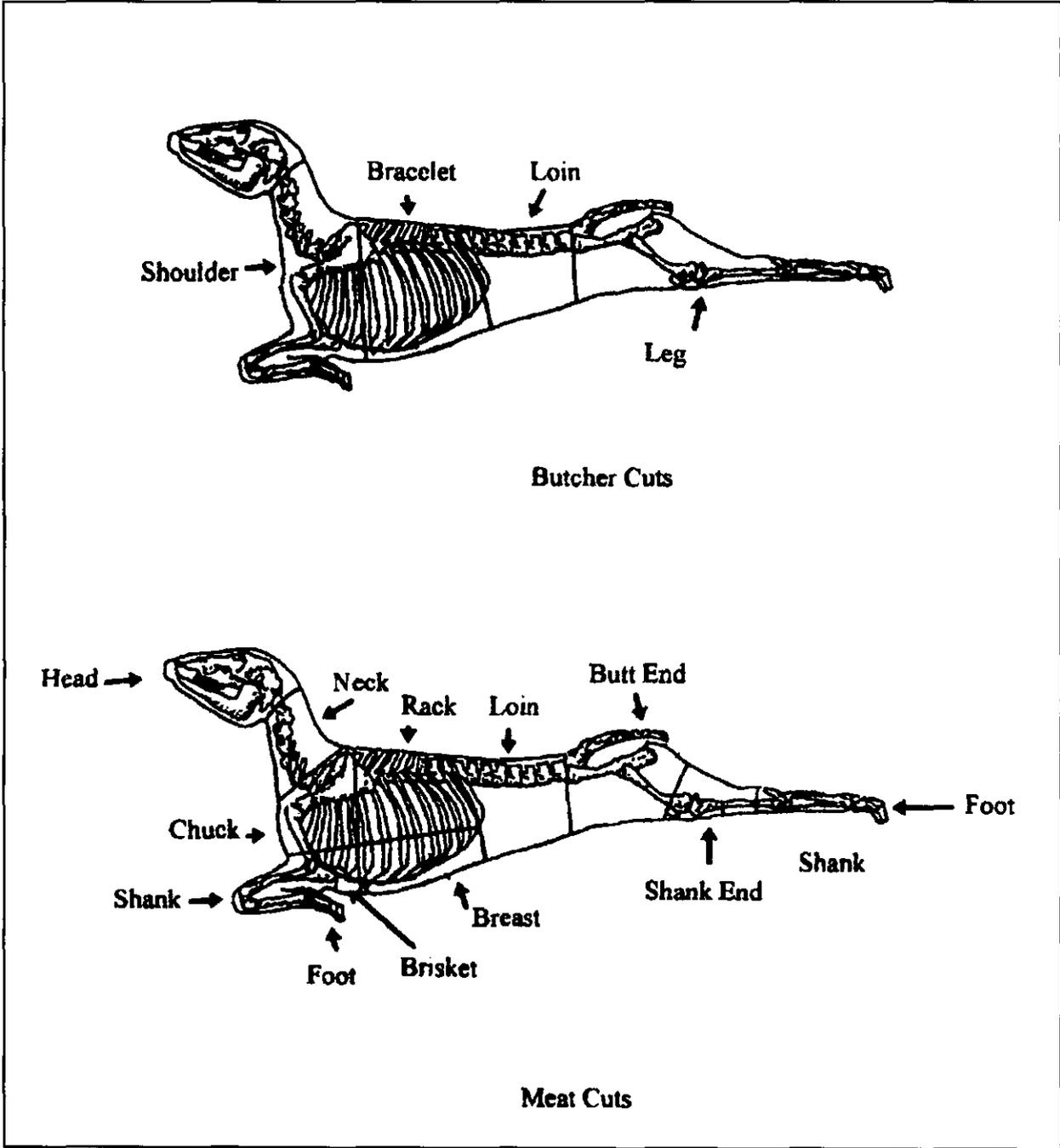
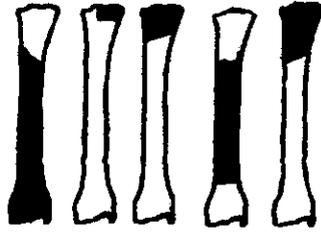


FIGURE C.1: Sheep/Mutton Butcher Cuts and Meat Cuts



133



169 176 177 180 191



734 743



416



315



459

Sheep/Mutton Illustrated Meat Cuts

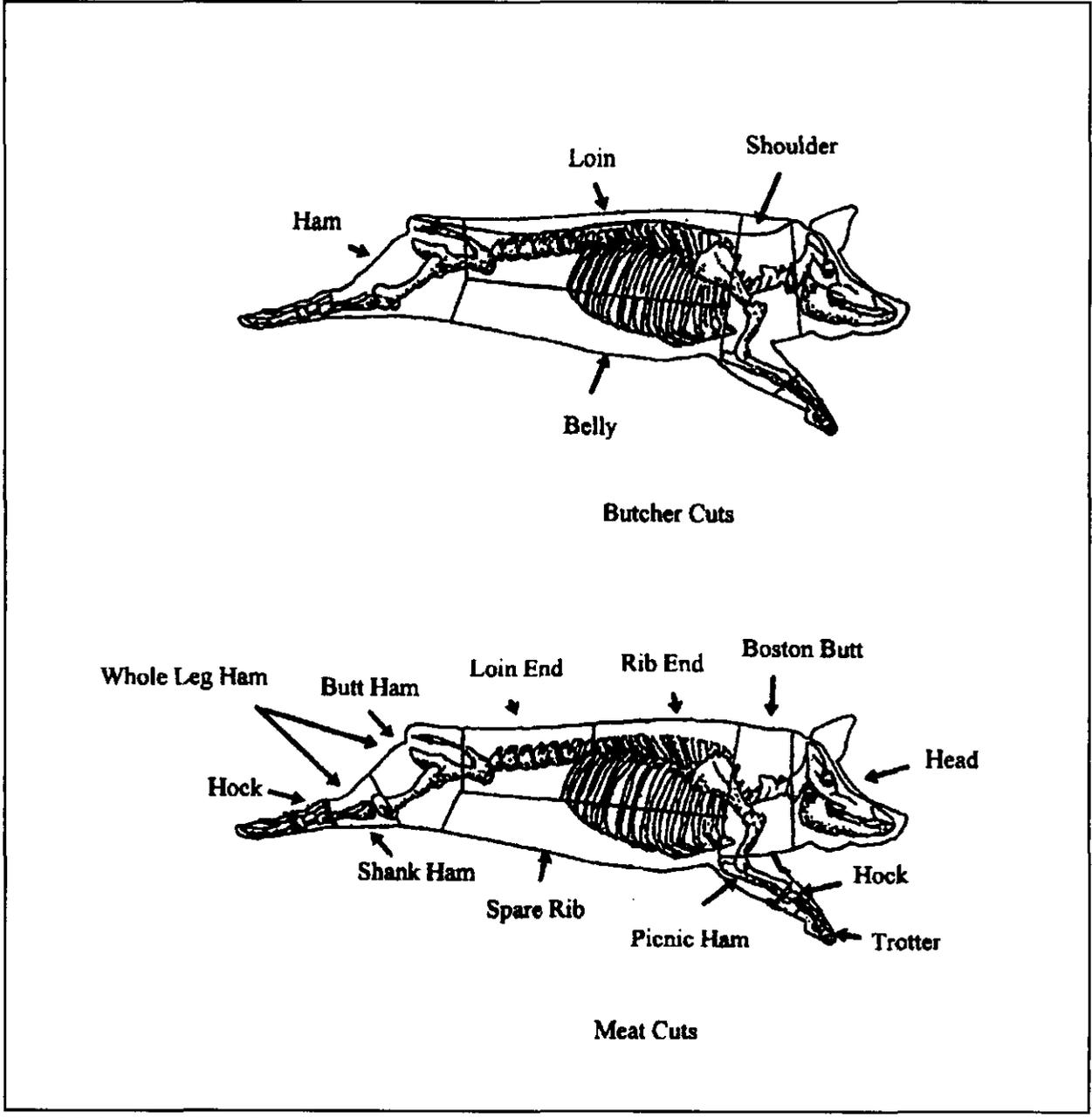
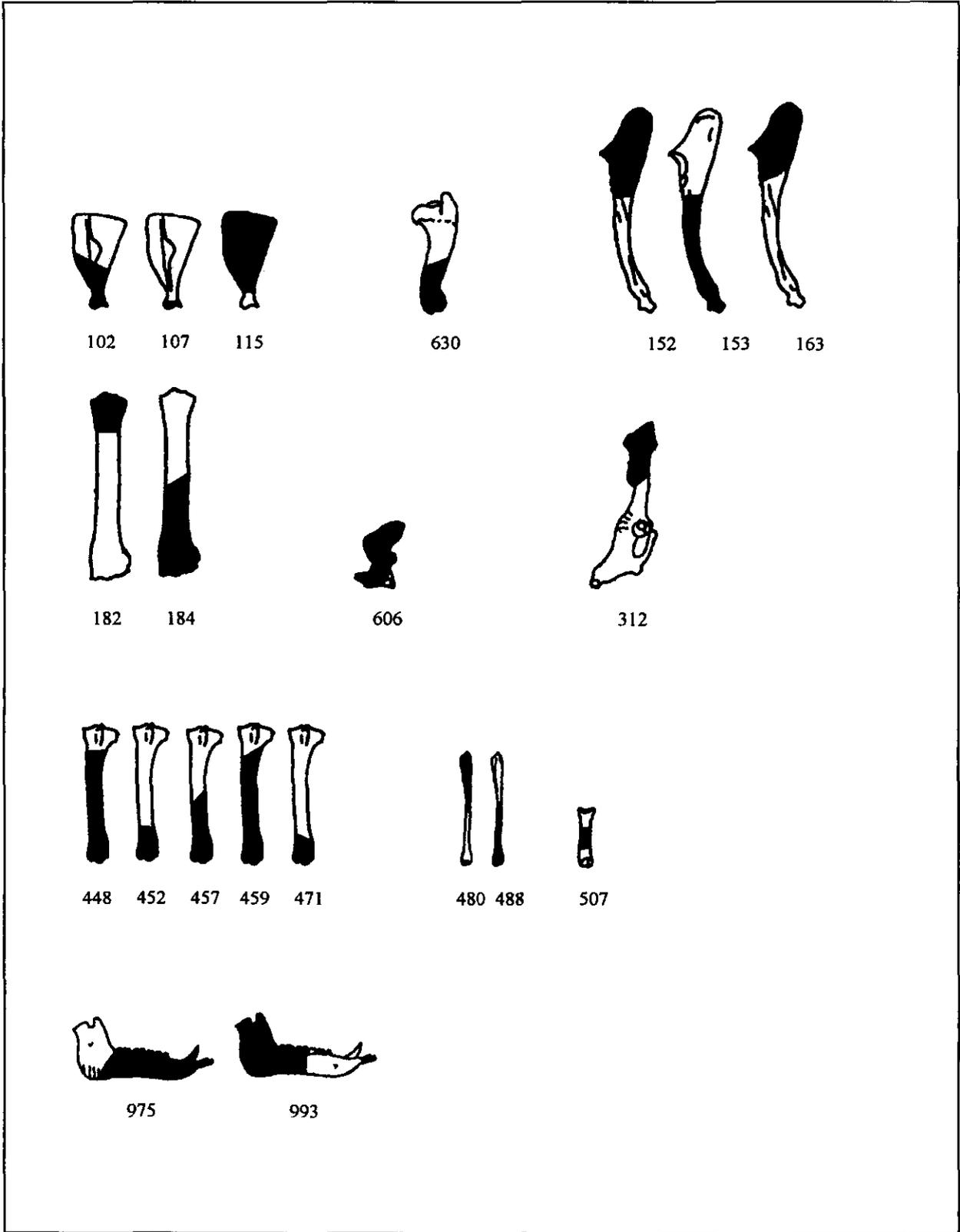


FIGURE C.2: Pig/Pork Butcher Cuts and Meat Cuts



Pig/Pork Illustrated Meat Cuts

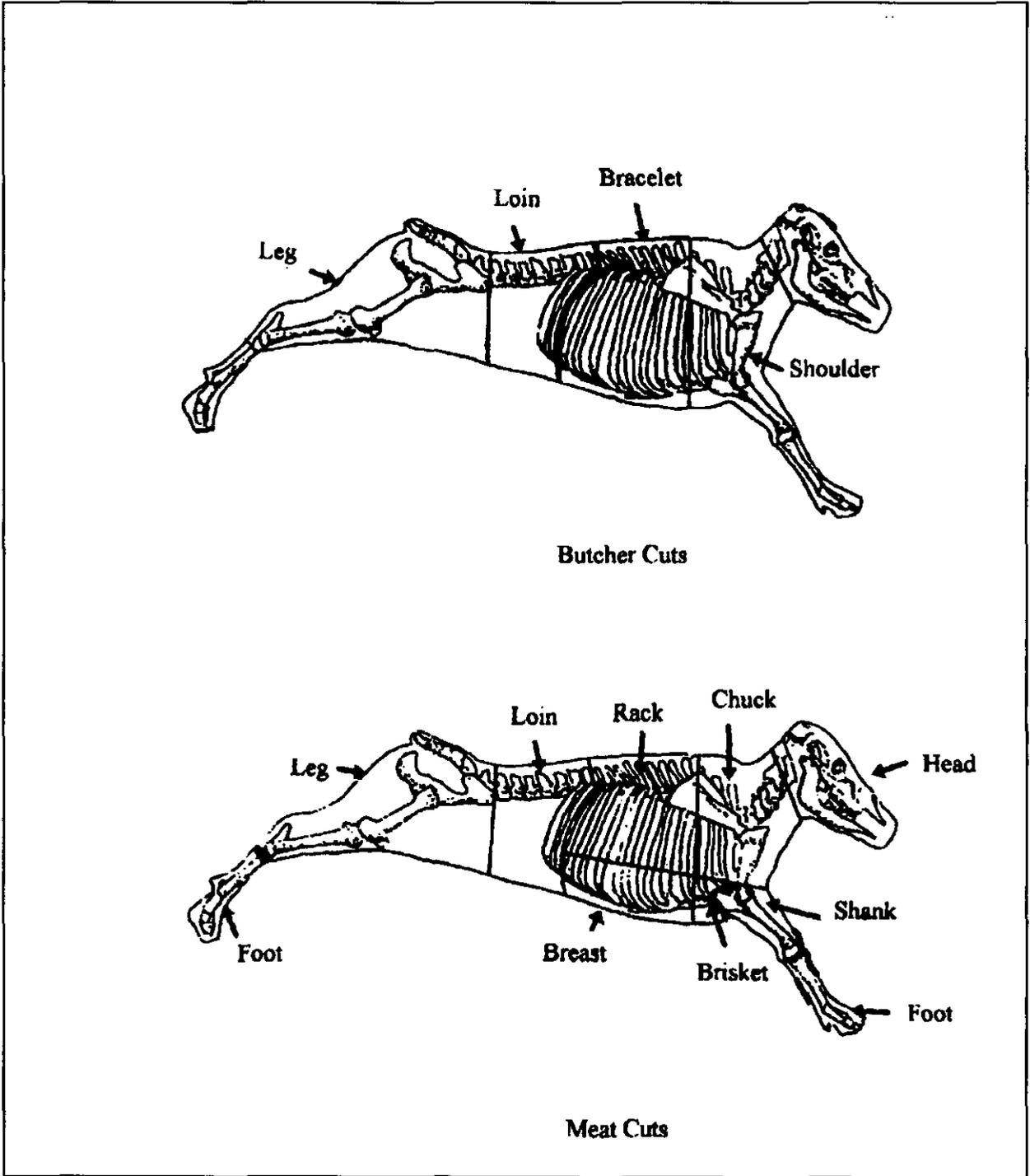


FIGURE C.3: Cattle/Veal Butcher Cuts/Meat Cuts

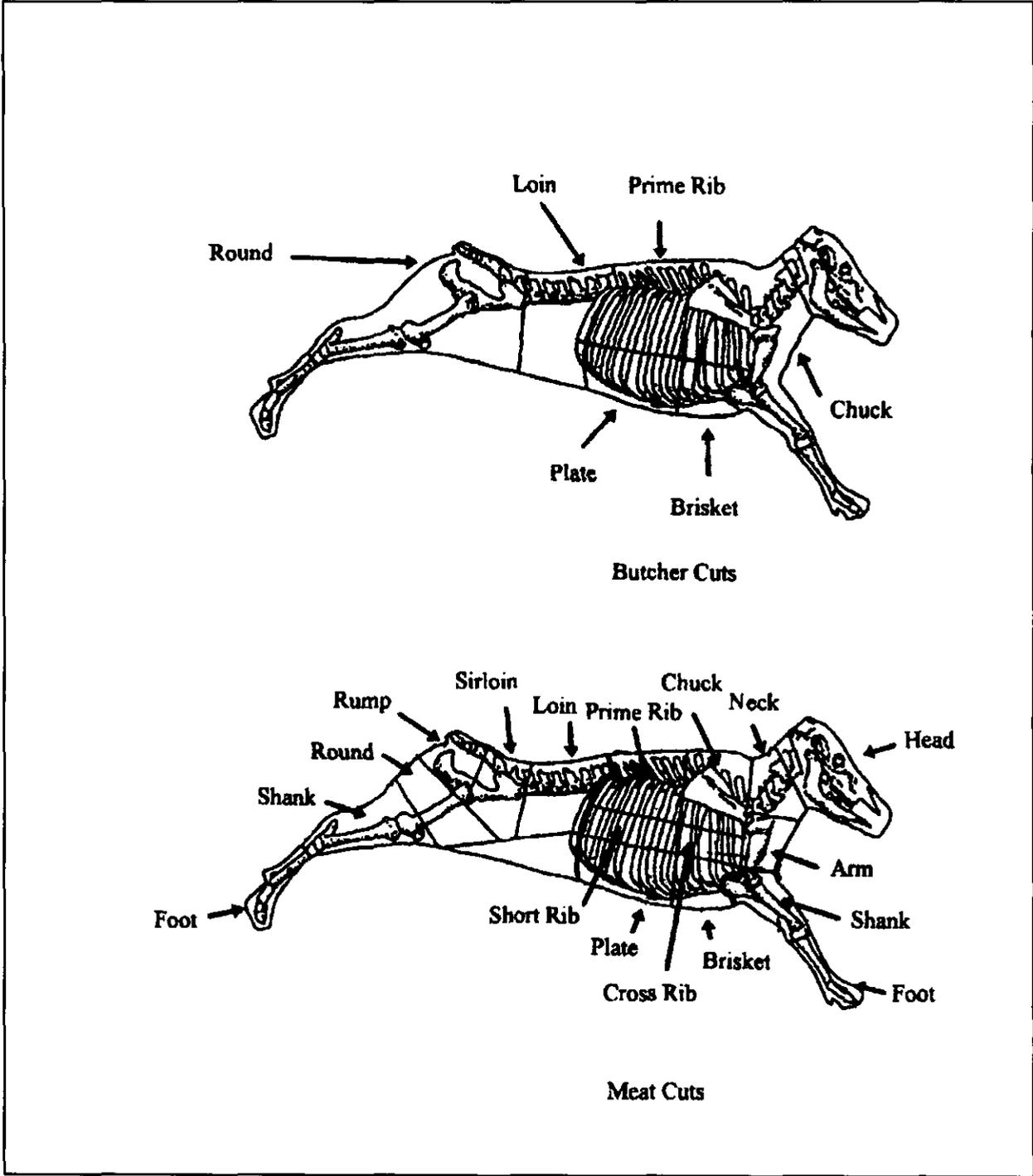
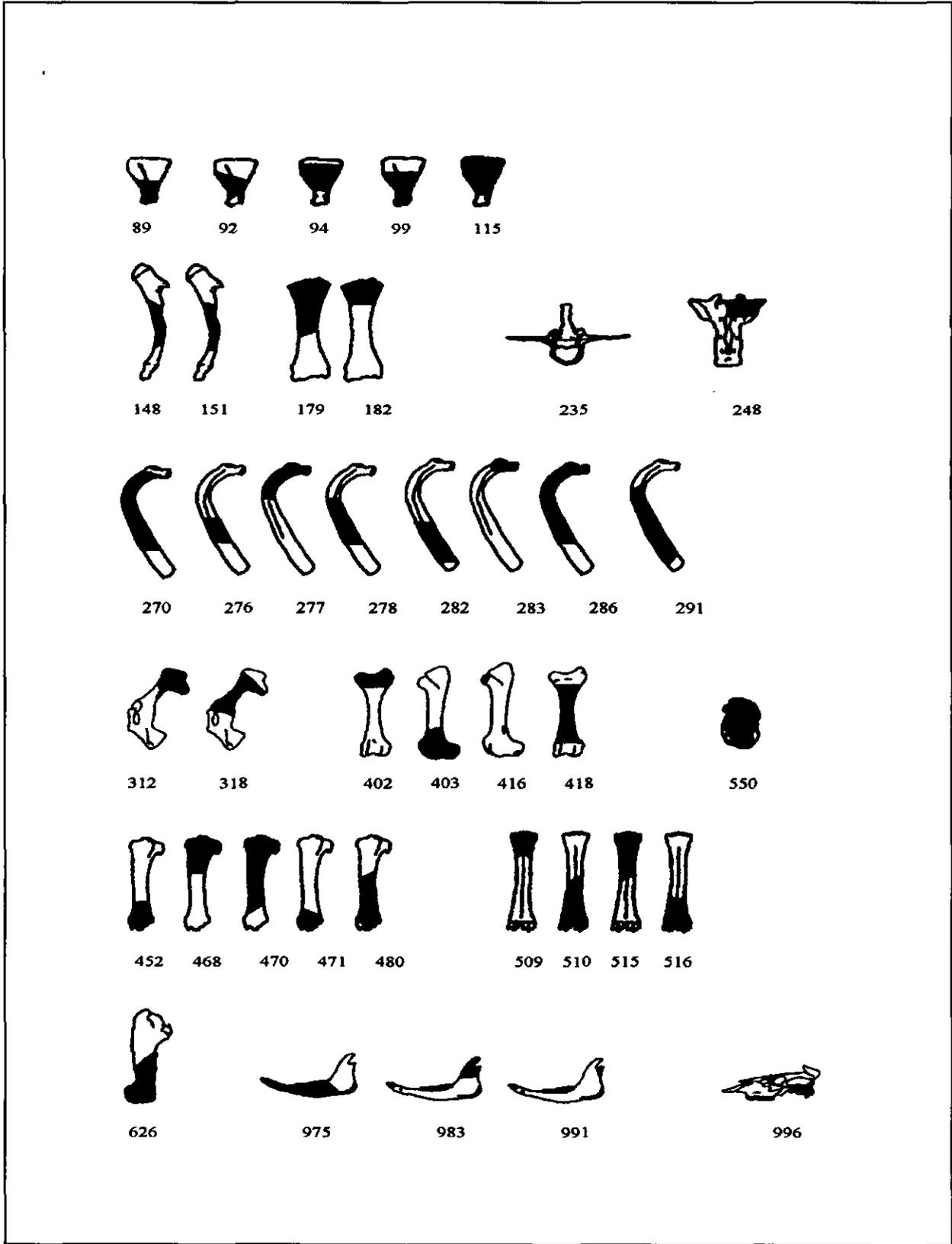


FIGURE C.4: Cattle/Beef Butcher Cuts and Meat Cuts



Cattle/Veal and Beef Illustrated Meat Cuts