

APPENDIX III

Faunal Analysis of the H. Grant Tenancy Site

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The faunal analysis at the Grant Tenancy site was done on the basis of the following groups which correspond to the provenience groupings in the remainder of the report.

Group A - Contolled Surface

Group B - Plowzone

Group C - Midden

Group D - 2Ap Over Foundation

Group E - Cellar Fill

Group F - Cellar Floor Midden

Group G - Exterior Midden, East

Group H - Ash and Brick Concentration

Group I - Builder's Trench

Group J - Miscellaneous Uncontrolled Proveniences

Grant Tenancy

The faunal assemblage from the Grant Tenancy Site consisted of 2354 specimens, of which 2140 were bones and 214 were shell fragments. This material was analyzed by designated provenience "Groups" and "Features" and they are listed in Table 1 by number of specimens per species. Groups were analyzed as single units but all the features were analyzed as one unit due to their small size -six of nine assemblages yielded less than 10 bones (Table 1).

In this report, the Group assemblages are presented, followed by the Features. First, a general discussion is presented for each provenience, then, a detailed discussion of each species. Finally, an overview discussion/conclusion section is presented. The discussion sections refer to data tables and figures at the end of the report, where applicable.

METHODS

The assemblage had been previously washed and placed in clear, plastic, bags with the appropriate provenience data.

The material was initially sorted into identifiable and unidentifiable fragments. The identifiable fragments were then grouped by species and element, where possible. Simultaneously, each specimen was studied, in detail, to identify pertinent data such as saw or cut marks, evidence of scavenging, age and sex data, physical condition, and meat portions. In turn, the identification and provenience data were recorded on small labels and stapled in the corner of each plastic bag. The clear bag allows the artifacts and analytical data to be viewed without opening the bag. After each assemblage was analyzed in this way, the data from each bag label was recorded on standard data sheets and then tabulated. Consequently, a final report was prepared and generally included the major text, data tables, figures and illustrations and photographs, where applicable.

Identification of the faunal materials was aided by the use of a skeleton comparative collection of modern animals housed in the archeology laboratory, Department of Anthropology, Catholic University.

Also, a collection of commercially sawed bone sections, etc., from modern "supermarket meats" as well as an extensive assemblage of bone elements from modern farm butcherings (Clark 1985) was used to classify and describe symmetrically cut and sawed bone elements from the assemblages. In many

cases, concentrations of symmetrically sawed bone elements of large domestic species were more common after the 1850s in historic faunal assemblages, I have studied, from the Middle Atlantic region. This is certainly linked to the development of more efficient commercial butchering techniques.

Maturation data used for computing "age at death", was recorded where possible. However, since the assemblage was highly fragmented and usable joint ends and teeth were often broken and deteriorated, maturation data was scarce. Also, for the preceding reasons, measurements on the bones were impossible in most cases and thus, sex and age data were minimal.

TERMINOLOGY

A number of terms used in the text refer to skeletal elements and technology and are explained in this section. Most of these are references to species discussions and the data Tables 2-20.

Although scientific names are used in the text and on charts, the Common names for all animals are used in the discussions sections. Consequently, the reader becomes familiar with the taxonomic names along with the common names.

The tables include the genus or class group names for animals such as Bos = cow or Aves = birds. They are listed horizontally. The rest of the faunal data is listed vertically, such as skeletal elements, number of specimens (elements, fragments), maturation data, etc. (Tables 2-20). The tables include a listing for provenience (Prov.) and modifications (Mod =Cut and Sawed) vs. totals.

Unidentifiable bones are grouped in categories. They include large mammals (Lg. mam.) referring to pig and cow sized animals; medium mammals = fox sized animals; small mammals = mouse to squirrel sized animals.

Cut and sawed bones are common in the assemblage, especially sawed elements. Cut or axed vertebrae are often identified as "split". That is, during the initial butchering of the animal, a common technique is to split the vertebrae column (backbone) down the middle from top to bottom. This process separates the carcass in two equal halves. The result is that the vertebrae are, also, split in two and are commonly found in the refuse faunal assemblage.

Sawed bones are a common occurrence in the assemblage. Frequently, sawed specimens exhibit a high degree of symmetry as far as sawing technology is concerned. In many assemblages, sawed elements are very common and reference is often made to symmetrically sawed bone which refers to systematic butchering technology on a professional or commercial level. A good example of this level of technology

is the abundance of symmetrically sawed sections representing "specialty" meat portions. Sawed bone sections consist of thick or thin, cross-cut sections usually from the shafts of legbones (femor, tibia, humerus), ribs, and innominates (pelvis). Examples of these sections are illustrated in Figures 4 and 5 . This type of sawing represents systematic butchering of entire animals such as cows, sheep and, especially, pigs. For assemblages I have analyzed from sites in the Middle Atlantic region, this type of technology is more common after the mid-1800's.

Limitations of Research

This assemblage represents many smaller assemblages of material. Unfortunately, small assemblages yield less information, in general. Also, most of the assemblages were in very fragmented condition which decreases the identification of species and thus decreases the amount of information recoverable.

Other problems focus on the interpretation of the faunal remains, specifically. With smaller samples, there is always a limited variety of skeletal elements represented in the assemblages. Furthermore, historic faunal assemblages are frequently but not always represented by food refuse in the form of individual meat portions. Rarely, especially in urban contexts, does an assemblage contain the complete remains of butchered animals which is more characteristic of assemblages from more rural contexts like farmsteads, plantations, etc. Thus, an important consideration is the number, distribution, and type of meat portions represented in an assemblage especially since most of the faunal remains represent food refuse.

Burnt and incinerated bone specimens were exceedingly rare in all the assemblages. This suggest that meats were often prepared by methods other than exposure to direct heat or the bone was removed and discarded prior to cooking. Such methods included pickling (salting), smoking, and cooking in liquid (boiling, stewing, etc.).

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Group A

The group A faunal remains were from surface collections. The material consisted of 91 bone fragments (Table 1) and was in poor physical condition. Most specimens were cracked and split with deep fissures running into the bone. The surface of many fragments was peeled off in layers which limited the identification of the elements. The entire assemblage was very fragmented which diminished the overall analytical interpretations.

Unidentifiable large mammal remains accounted for 46% (42) of the total (91). Cow and pig remains were very common but consisted, mostly, of teeth.

Bos taurus (Cow)

Cow remains included mostly teeth and hindleg fragments (Table 2). The teeth were probably refuse from initial butchering since they are not associated with meaty areas of the body. One sawed femur (upper hindleg) shaft was from a round roast and a tibia (lower hindleg) fragment represented a hind-shank cut (Figure 1).

Sus scrofa (Pig)

Pig bones (14) were mostly teeth from both the upper and lower jaws. This material is probably refuse from initial butchering. One shoulder (scapula) fragment was identified and represented a "Boston Butt" roast (Figure 2).

Ovis aries (Sheep)

Sheep remains included a single tibia (lower hindleg) fragment and was from a shank half "leg of lamb" (Figure 3).

Terrapene carolina (Eastern Box Turtle)

One plastron (lower shell) fragment was identified as box turtle which is a very common terrestrial species adapted to moist meadow, field and forest fringe environments. Box turtles were a common food resource.

Callinectes sapidus (Blue Crab)

Four fragments were identified as blue crab (Table 2) and included claws and shell fragments. The blue crab ranges from low-salinity of the tidal-freshwater zones to the full salinity of open ocean. Blue crabs are a very popular food resource, especially in the Chesapeake Bay region. †

Group B

The assemblage from Group B included 531 bone and 77 shell fragments (Table 1). Unidentifiable large mammal remains constituted 68% (415) of the total assemblage indicating the highly fragmented nature of the assemblage.

The most common species identified were cow, pig, and oyster but many smaller wild animals were also recorded (Table 1). There were 11 species identified in all.

The assemblage was in good physical condition but highly fragmented which diminished the overall interpretations.

Bos taurus (Cow)

Cow remains were very common (51) but were mostly isolated teeth (Table 3). Most of the teeth were fragments and probably represented refuse from initial butcherings. Other elements were from ribs, fore and hind limbs and foot extremities (toes and ankle bones). One of the rib was a sawed shaft section, probably from a short-rib portion. Rib-joint fragments, though usually rare, were also identified and are often removed with the vertebrae (backbone) representing standing-rib roasts. The remainder of the shoulder (scapula) fragments were from chuck and necks cuts. One fragment was an axed joint of the scapula (shoulder) which is often removed when the chuck portions are separated from the neck and lower shoulder meats (Figure 1). Thus the scapula joint is often removed and discarded during initial butchering. The blade of the shoulder (scapula) is retained within meaty portions such as the "blade" pot roast or chuck (blade) steak (Figure 1). A cut astragalus (ankle) was recorded and is associated with the hind-shank portions but is usually removed, separately, during initial butchering (Figure 1).

The maturation data from tooth wear patterns suggested that 2 cows were at least 2.7 years old at death.

Sus scrofa (Pig)

Pig remains (28) were all teeth except 2 leg bone fragments (Table 3). A humerus (upper foreleg) shaft fragment was from a picnic shoulder cut (Figure 2). One fibula (lower hindleg) shaft fragment represented a "shank-half" ham. The isolated tooth remains were probably refuse from initial butcherings, as the heads are usually removed and discarded soon after the animal is killed and cleaned (Figure 2).

The limited maturation data from tooth wear patterns indicated that 2 pigs were less than a year old at death.

Ovis aries (Sheep)

The remains of sheep (9) were less common than those of cow or pig (Table 3). Teeth were numerous and probably represented refuse from initial butcherings. Other elements were from the fore and hindlegs and vertebrae, and represented fore-shank, hind-"leg of lamb", hind-shank and "rack of lamb" portions (Figure 3).

Tooth wear maturation data indicated that 1 sheep was 17 months old at death.

Unidentifiable Large Mammals

This material constituted 68% of the total assemblage and probably represented large domestic animal remains. Large wild animal remains (white-tailed deer) were not identified in this collection. Most of the fragments were from longbones (legs) and ribs.

Sylvilagus sp (Rabbit)

A single rabbit foot bone was identified (Table 3). Cottontail rabbits are very common in the eastern U.S. and were often hunted for food.

Rattus rattus (Black Rat)

Rat bones were rare and only 2 were identified in the entire assemblage. Rats are common refuse scavengers and their remains are often identified in faunal assemblages. Gnaw marks from rat incisors are often identified in historic assemblages, however, gnawed bone was rare in this assemblage which suggested the refuse deposit was protected from prolonged scavenging.

Gallus gallus domesticus (Chicken)

Chicken remains (3) were rare and included wing and back portions (Table 3).

Turtles

Terrapene carolina (Eastern Box Turtle) was identified and consisted of 7 shell fragments (Table 3). Box Turtles

are very common terrestrial species and were a common food resource.

Pisces (Fish)

The remains of perch and bass were identified (Table 3). Both species were represented by scales and skull fragments. Both are common freshwater species

Crassostrea virginica (American Oyster)

Oyster remains (56) were very common and included mostly complete valves (shells). This material was very deteriorated and exhibited a chalky texture. Oysters usually live in colonies in saline areas from estuary to subtidal ocean zones and are a common food resource. Their shells were also used for mortar and fertilizer.

Mercenaria mercenaria (Hard Clam)

Less common than oyster, hard clams (21) included mostly shell fragments (Table 3). Hard clams have a more restricted distribution than oysters. They live in saline tidal flats and burrow just below the surface in muddy-sand or sandy areas. They are a common food resource.

Group C

The faunal assemblage from Group C consisted of 266 bones and 50 shell specimens (Table 1). Of this, 201 (64%) fragments were unidentifiable large mammal remains.

There were a wide range of species identified. Of these, cow, pig, sheep, box turtle and oyster were most common. Many small wild species were important secondary food sources (Table 1).

This material was in good physical condition but highly fragmented which limited the analytical data from the assemblage.

Bos taurus (Cow)

Cow remains (37) were common and a wide range of elements were recorded, representing most major portions of the skeleton (Table 4). This evidence demonstrates that the remains include refuse from initial butchering. Especially important were toe, ankle, knee, teeth, jaw and cranial elements which are not associated with meaty areas of the animal. These elements are usually removed and discarded during the initial stages of butchering. Interestingly enough, one patella (knee) and astragalus (ankle) were cut or axed. The knee was split in two, which resulted from the initial processing when the hind leg are disarticulated and divided into major meat portions (Figure 1). The astragalus was probably cut while processing the lower hindlegs.

The most common elements were hindlegs, vertebrae, and forelegs. The hindleg remains were, mostly, from round and shank roast cuts. One innominate (pelvis) represented a sirloin roast (Figure 1). Vertebrae were common and represented chuck and standing-rib portions. Two of the vertebrae were split resulting from initial butchering when the backbone is split in two from top to bottom creating two equal halves of the carcass. This produces lengthwise splitting of the vertebrae body (centrum).

Ribs were cut and sawed in sections representing short-rib and short-plate meat portions (Figure 1). One rib-joint fragment was identified and is usually butchered with "standing-rib" or short-loin meats (Figure 1).

There were 2 sawed shoulder (scapula) fragments identified representing chuck roast portions. One humerus (upper foreleg) element was from a "rolled" shoulder cut and an ulna (lower foreleg) from a foreshank cut.

The preceding evidence demonstrates that with a greater diversity of elements there is a corresponding increase in the range of meat portions. Most of the cuts mentioned above were better quality portions associated with meaty areas of the body.

The maturation data from, both, tooth wear and bone fusion patterns, indicate that 2 cows were at least 3 years old at death.

Sus scrofa (Pig)

Pig remains (12) included, mostly isolated teeth resulting from initial butcherings. Two humerus (upper foreleg) shaft fragments were from picnic - shoulder cuts (Figure 2).

Maturation data from toothwear patterns were limited but suggested that 1 pig was less than 1 year old at death.

Ovis aries (Sheep)

Sheep bones were less common than cow or pig (table 4). Also, compared to cow and pig, sheep teeth were scarce. The common elements were from the hindlegs. Several hindleg bones were from "butt" and shank-half "leg of lamb" portions (figure 3). A radius (lower foreleg) was from a fore-shank cut.

Unidentifiable Large Mammals

This material included 201 fragments probably remains of large domestic mammals. Fragments from large wild species (i.e., white-tailed deer) were not identified. Most of this material represented longbone (fore-hindlegs) fragments (Table 4). There were 33 incinerated or calcined bone specimens from, either, burning or chemical weathering.

Terrapene carolina (Eastern Box Turtle)

Box turtle bones (10) included only shell fragments (Table 4). This species is adapted to most meadow-woodland fringe habitats and was often used for food.

Crassostrea virginica (American Oyster)

Oyster shell remains (41) were relatively common and unbroken valves (shell). Oysters are found in saline waters

in estuary to subtidal ocean zones. Oysters are a popular food resource and the shells were often pulverized for mortar or fertilizer.

Mercenaria mercenaria (Hard Clam)

Hard clam remains were less abundant than those of oysters (Table 4). Hard clams have a limited distribution. They require high salinity environs (at least 2/3 that of ocean water) and prefers tidal flats with muddy-sand or sand. They burrow just below the surface in shallow water. Hard clams are a common food resource.

Group D

Group D consisted of 243 bones and 15 shell fragments and exhibited a wide range of domestic and small wild species (Table 1). Of the total, 129 (50%) fragments were unidentifiable large mammal remains. The most common species were cow, pig, sheep, and box turtle.

The material was in good physical condition but highly fragmented which limited the identification of many elements.

Bos taurus (Cow)

Cow remains (10) included isolated teeth, vertebrae and a few hindlimb fragments (Table 5). The teeth probably represent refuse from initial butcherings. The hindleg and vertebrae were from hind-shank, neck and short-loin cuts (Figure 1).

Sus scrofa (Pig)

The remains of pig were relatively common and represented a wide range of skeletal elements from most parts of the body including isolated teeth, hindlimbs, vertebrae, innominates (pelvis) and forelimbs (Table 5). Many of these elements, such as, teeth, ankle, and toe bones most likely constitutes refuse from initial butcherings. One tibia (lower hindleg) fragment was from a "shank-half" ham and two vertebrae representing "Boston shoulder butt" and loin cuts (Figure 2).

Maturation data was limited but tooth wear patterns indicated that 1 pig was less than a year old at death.

Ovis aries (Sheep)

Ten sheep bones were identified and were, mostly, hindlimb and vertebrae fragments (Table 5). Interestingly, sheep teeth were not recorded which contrasts sharply with the data for cow and pig. Sheep skulls are usually discarded after butcherings and, excluding teeth,, are rarely identified in most assemblages. The hindlimb and innominates (pelvis) fragments were probably from hind "leg of lamb" portions (Figure 3). The vertebrae remains constitute loin and "rack of lamb" roasts. Two vertebrae were split lengthwise, the result of axing the backbone down the middle during initial butchering which produces two equal halves of the carcass. "Rack" meat portions are easily removed from the half carcass.

Sylvilagus sp. (Rabbit)

Rabbit remains were rare (3) in the assemblage. This species occupies open-field and woodland fringe habitats, and is a common food resource.

Rattus rattus (Black rat)

Rat remains (4) were scarce. They frequently scavenge refuse deposits and 3 bones from Group D exhibited gnaw marks which match rat incisors, especially since rats were the only rodents identified in this assemblage. In general, it was apparent that rat scavenging was minimal and suggests that the refuse deposit was protected, to some degree, from prolonged rodent scavenging.

Gallus gallus domesticus (Chicken)

Chicken bones (14) represented wing, back, breast and leg portions. However, other elements, including vertebrae, lower leg and mandible (jaw) fragments are not meaty portions and represent refuse from processing whole carcasses.

Terrapene carolina (Eastern Box Turtle)

Box turtle remains were very abundant (43) and represented at least five individuals. A variety of elements were identified, including limb bones, innominates (pelvis) and, as usual, shell fragments. Apparently, entire turtle carcasses were processed at the site. The box turtle is a common terrestrial species and lives in moist field and woodland fringe habitats. It is often used as a food resource.

Pisces (Fish)

Fish remains were rare consisting of 2 indeterminable skull fragments.

Crassostrea virginica (American Oyster)

Oysters were represented by 6 shell fragments. This species is a common food resource and the shells were often pulverized and used for mortar mix or fertilizer.

Mercenaria mercenaria (Hard Clam)

Hard clam remains were mostly fragments and, as mentioned elsewhere, this species is a popular food resource.

Group E

Group E represented the largest assemblage from the Grand Tenancy site, consisting of 708 bone and 40 shell fragments (Table 1). Of the total, 366 (52%) fragments were unidentifiable large mammal bones which demonstrates the fragmentary nature of the assemblage.

There were 18 species identified - more than any other assemblage (Table 1). They represented a wide variety of mammals, aves (birds), reptiles, pisces and shellfish. The most common species were cow, pig, sheep, rabbit, chicken and box turtle. In addition to the usual domesticates, a variety of small wild species were identified, including rabbit, squirrel, bat, vole, box turtle, red-tailed hawk, catfish, perch, bass, oyster and hard clam. The diversity of species was evidence of a variety of micro-environments in the vicinity of the site including woodland, meadow, and fresh water stream, etc. Especially sensitive indicators of micro-environments were species like Microtus pennsylvanicus (Meadow Vole) and Eptesicus fuscus (Big Brown Bat) - see species discussion below.

Freshwater habitats were indicated by, at least, four varieties of freshwater fish and one species of freshwater mussel. Conversely, oysters and hard clams are adapted to variable marine conditions.

This assemblage was in good physical condition although highly fragmented. However, the fragile elements of small animals were well preserved, suggesting that the deposit was not exposed to extensive weathering. A number of elements (7) exhibited rodent gnawing and the gnaw marks match the tooth pattern of rat incisors. Rabbit and meadow vole incisors were also compared to the gnaw marks but were either too large or small.

Bos taurus (Cow)

The remains of cows (18) were relatively scarce compared to those of pig and sheep (table 6). Foreleg and isolated teeth represented the bulk of the assemblage. The foreleg remains were articulated and cut off at the distal end. This represented a foreshank meat portion (Figure 1). One tarsal (hind-ankle) was cut, probably, the result of initial butchering when the feet are removed from the lower leg. The teeth, also, represented refuse from initial butcherings.

The maturation data from bone fusion and tooth wear patterns indicated that one cow was less than 3 years old and another was at least 3 years old at death.

Sus scrofa (Pig)

There were 42 fragments identified as pig but 19 (45%) of these were isolated teeth (Table 6). Most likely, the teeth and leg extremities (toes, ankles) were refuse from initial butchering. Other common elements were fore and hindleg, and vertebrae fragments. A number of these were cut, apparently with an axe. Foreleg and shoulder elements were from "Boston Butt", picnic-shoulder, and "hock" portions (Figure 2). Two vertebrae fragments were from loin cuts. One innominate (pelvis) and femur (upper hind leg) fragment represented "butt half" hams while several tibia (lower hindleg) shaft fragments were from "shank-half" hams (Figure 2).

Maturation data from tooth wear and bone fusion patterns represented a variety of ages. The remains of one fetal pig were identified probably less than 3 months old. Two other pigs were less than 1 year old at death.

Ovis aries (Sheep)

Sheep bones (23) were common but represented very specific areas of the body which contrasted with the evidence for cow and pig. Sheep teeth were very rare (1) compared to cow and pig (Table 6). The rest of the refuse consisted of lower foreleg, lower vertebrae and upper hindleg elements which represented the meatiest area of the sheep (Figure 3). The foreleg elements were from foreshank cuts and one of the radius shafts was axed. The vertebrae (lower back) represented loin and "rack of lamb" portions (Figure 3). Many of the vertebrae were split, lengthwise, from cutting the sheep in two equal halves. Each half was then processed into smaller portions.

Two femur (upper hindleg) fragments were from hind, "leg of lamb" cuts (Figure 3) and one of these was sawed but the marks were asymmetrical and suggested the use of a handsaw.

Overall, the sheep portions described above were from meaty areas of the body and represented good quality cuts (Figure 3).

Unidentifiable Large Mammals

The bulk of this assemblage was long bone (legs) and rib fragments. Most of this material, probably, represented large domestic mammal remains. Large wild animal remains (white-tailed deer) were not identified.

Sylvilagus floridanus (Eastern Cottontail Rabbit)

Cottontail remains were very common, especially compared to all the other assemblages from Grant Tenancy (Table 1). This species inhabits open woodland, meadow, field and forest edge-meadow environs. It feeds on a variety of herbs, grasses, berries and cane. A variety of skeletal parts were recorded suggesting that entire carcasses were being processed. The most abundant elements were fore and hindlegs. Rabbits are a very popular food resource.

Sciurus carolinensis (Gray Squirrel)

Only 2 elements were identified as gray squirrel (Table 6). This is a common woodland species and is, also, a common food resource.

Rattus rattus (Black Rat)

Rat remains were scarce (4) and represented, mostly, hindlimbs (Table 6). As noted elsewhere, rats are notorious refuse scavengers and a number of bone fragments (7) exhibited rodent gnaw marks which matched, closely, the pattern for rat incisors (front teeth).

Microtus pennsylvanicus (Meadow Vole)

The vole remains included only teeth and mandible (jaws) but represented 3 individuals (Table 6). Vole elements were not recorded in any other assemblage.

The meadow vole is a very common, small herbivorous rodent. It inhabits open meadows or fields with long grasses and eats a variety of grass-like plants, grass seeds, as well as farm grains.

The vole remains were mandible and cranial elements which are very delicate and, usually, are not well preserved. This suggest, perhaps, the deposit was well protected from prolonged weathering and the recovery techniques employed were such, that, some small fragile bones were recovered. Conversely, there is a possibility that the voles were intrusive but the evidence is inconclusive without knowing the exact nature of the deposit.

Eptesicus fuscus (Big Brown Bat)

This is one of the most common bat species in, either rural or urban settings and sightings are common in the city

as well as on the farm. It is the largest species in this region with a wing span up to 12 inches. It prefers to live in hollow trees, cliffsides and, as usual, caves. It feeds on a variety of insects.

One maxillary (upper jaw) fragment was identified and suggested the refuse was sufficiently protected to allow the preservation of small, delicate bone elements.

Gallus gallus domesticus (Chicken)

The remains of chicken were very common (38) and most were from wing, back, thigh and leg portions (Table 6). The wide range of skeletal elements suggested that whole carcasses were processed at the site.

Of special interest was a rodent gnawed leg bone (tibiatarus). This specimen was systematically gnawed from the joint-end toward the middle of the shaft. The tooth marks match those of rat incisors and several rat elements were identified in the assemblages.

Meleagris gallopavo (Turkey)

Several turkey bones were identified and all were hindlimb elements (Table 6). Turkey remains were uncommon for the site, as a whole. The turkey is a woodland species and is abundant in many areas of the eastern U.S. It prefers woodland environments with ample rainfall and eats a variety of food such as nuts, seeds, fruits of the forest bottoms and insects (grasshoppers, beetles, etc.).

Buteo jamaicensis (Red-tailed hawk)

One coracoid with cut marks (shoulder) was identified (Table 6). This species prefers forest-fringe and open-field environments and hunts, mostly, smaller mammals which was interesting since many smaller mammals were identified in this assemblage. The cut marks on the coracoid were surprising and there is little conclusive evidence that hawks were eaten but they were often hunted for their plumage.

Terrapene carolina (Eastern Box Turtle)

Box turtle remains were very abundant (68) and were mostly shell fragments although limb-bones, vertebrae, innominates and a mandible were identified. This diversity suggests that whole turtle carcasses were processed at the site. This species is common throughout the eastern U.S., in

most woodland and meadow environs. The abundance of this species suggests they were used as food.

Pisces (Fish)

Ictalurus sp. (Catfish) remains included spines, (pectoral) and rays. Catfish are bottem feeders and live in most freshwater streams, lakes and ponds. They are also tolerant of low salinity aquatic conditions. Most catfish species are common food resources.

Perch were also identified (7) from bones and scales. This is also a common freshwater fish and is a popular food resource.

Bass remains included cranial fragments and is another popular freshwater fish.

The remains of all three species were mostly cranial fragments and probably represent butchering refuse when the heads were removed and discarded.

Crassostrea virginica (American Oyster)

There were 29 oysters shell fragments (Table 6) and half these specimens were complete valves (shells). Oysters live in salinity subtidal and estuary zones. This species usually lives in colonies along salt marshes and estuaries. They, also, thrive upstream in shallow brackish waters. As, mentioned elsewhere, oysters are a popular food resouce and their shells were, often, pulverized for mortar mix and fertilizer.

Mercenaria mercenaria (Hard Clam)

Hard clam remains were less common than those of oysters (Table 6). They are found in more restricted environs along tidal flats of higher salinity levels compared to oysters. They burrow just beneath the surface in muddy-sand or sandy areas. This species is, also, a common food resource.

Elliptio (cf) dilatadus (Lady finger)

One Elliptio shell was identified. This species is a very common freshwater mussel (bivalve) and suggests that a stream or river exists in the vicinity of the site.

Overview: Group E

Since this assemblage was so large, there are a number of important facts that should be stressed.

This assemblage yielded the widest range of species (18) including large domestic mammals and a variety of small wild animals (Table 1). This included the greatest variety of mammals, aves (birds), pisces (fish) and shellfish. These species represented a diverse number of micro-environments including woodland (turkey, squirrel), woodland-fringe (rabbit, box turtle), meadow/field (hawk, vole, box turtle), freshwater stream (catfish, perch, bass, elliptio) and salt marsh/tidal flats, etc. (oyster, hard clam).

There was considerable variations in the element distributions between the common species. Cow and pig remains were mostly teeth and fore - and hindleg elements. In contrast, sheep teeth were not recorded and common elements were vertebrae, fore - and hindleg bones.

Some species such as pig, rabbit, and chicken, exhibited a wide range of elements suggesting that whole carcasses were butchered in the vicinity of the site.

There was, also, variation in the distribution of meat portions among large domestic mammals. Cow portions were, mostly, shoulder cuts. Pig remains represented a variety of cuts, especially shoulder and "shank-half" hams. Sheep portions were from the loin, shoulder, and hind "leg of lamb".

There was considerable variation in the maturation data between the large domestic mammals. Cows were, generally, 3 years or older at death, pigs were less than 1 year old at death and data was not available for sheep remains due to the absence of teeth and elements with joint.

Group F

This assemblage was very small, consisting of only 34 bone and 1 shell fragment (Table 1). The elements were limited for most species and, thus the assemblage yielded very little specific information.

The collection was in good physical condition but was very fragmented.

Sus scrofa (Pig)

One element was identified as pig which was an isolated canine tooth (Table 7). This was probably from butchering refuse.

Ovis aries (Sheep)

One cervical vertebrae was recorded and was from the neck area. This portion represents a poor quality meat cut.

Sylvilagus floridanus (Cottontail Rabbit)

Rabbit remains included only 2 elements. This species is adapted to open field and woodland-fringe environments. It is commonly hunted and is a popular food resource.

Gallus gallus domesticus (Chicken)

Only two chicken bones were identified and they were leg and toe bones. The leg bone was from a thigh portion.

Pisces (Fish)

Fish remains were very common and two species were identified.

Ictalurus sp. (Catfish) remains included one dorsal spine. This element is a very dense bone and is often recovered in faunal assemblages. Catfish are bottom feeders in rivers, streams, ponds, etc., and are common food resources.

Perca flavescens (Yellow Perch) remains were very common and consisted of cranial elements. This material probably represents butchering refuse when the heads are removed and discarded.

Group G

The faunal assemblage from Group G was small (59) which limits the interpretive data from the analysis. The remains included 58 bones and 1 shell fragment (Table 1). Unidentified large mammal fragments accounted for 68% (40) of the total assemblage. Although small, there were a variety of species (6) identified in the assemblage (Table 8).

The material was in good physical condition but was highly fragmented.

Sus scrofa (Pig)

Pig bones (5) included isolated teeth and hindleg fragments. The teeth probably represent initial butchering refuse. The hindleg bones represent "butt half" and "shank half" hams (figure 2).

Didelphis marsupialis (Opossum)

One element was identified as an opossum (Table 8). This was the only opossum element identified in the entire assemblage. This species is a cat sized mammal which lives in most rural and urban settings. It eats a wide variety of foods and is a common scavenger. In some areas of the eastern U.S., opossum is a popular food.

Sciurus carolinensis (Gray Squirrel)

Two foot elements were identified as gray squirrel (Table 8). Squirrels are common woodland species and are widely distributed across the eastern U.S. They are a popular food resource in many areas.

Gallus gallus domesticus (Chicken)

Chicken remains (5) included wing, breast, and thigh portions (Table 8).

Terrapene carolina (Eastern Box Turtle)

Box turtle remains consisted of 5 shell fragments (Table 8). Box turtles are field/woodland fringe inhabitants and were often used as food.

Mercenaria mercenaria (Hard Clam)

Only one hard clam shell fragment was identified (Table 8). Hard clams are commonly found in saline, tidal flat environs and are a popular food resource.

Group H

The group H faunal assemblage was very small (15) and thus, has minimal interpretive value. The material was in good physical condition.

Sus scrofa (Pig)

There were 3 pig bones identified, consisting of rib and foot bones (Table 9).

Ovis aries (Sheep)

Sheep remains were all rib fragments and several (4) exhibited axe marks. This material, probably, represented "rack of lamb" cuts (Figure 3).

Sylvilagus floridanus (Cottontail Rabbit)

One femur (upper hindleg) was identified as rabbit. This is a common woodland-field species and is, also, a popular food resource.

Gallus gallus domesticus (Chicken)

One chicken bone was identified and was from a thigh meat portion (Table 9).

Terrapene carolina (Eastern Box Turtle)

Two box turtle bones were identified consisting of forelimb remains. This species inhabits moist woodland and field environments often close to fresh water. Box turtle was a common food resource in many areas of the eastern U.S.

Group I

The assemblage from Group I was small and, thus has limited interpretive value. The material consisted of 42 bones and 24 shell fragments (Table 1). The common species were pig, sheep and shellfish. The material was in good condition, although highly fragmented.

Bos taurus (Cow)

Cow remains were rare and included an isolated tooth and rib fragment (Table 10).

Sus Scrofa (Pig)

This material consisted of isolated tooth fragments including those of the upper (maxillae) and lower jaw (mandible). Other elements were rib and hindleg fragments (Table 10). Of this, a sawed tibia (lower hindleg) shaft was from a "shank-half" ham (Figure 2).

Ovis aries (Sheep)

Sheep remains were common and represented a variety of quality meat cuts. Several vertebrae were from shoulder portions. One innominate (pelvis) and femur (upper hindleg) were from butt-half "leg of lamb" (Figure 3).

Microtus sp. (vole)

One element from a vole was identified (Table 10). Voles inhabit open field/meadow environs and are one of the most abundant small field mammals in the eastern U.S. They eat a variety of seeds, grasses and even farm grains.

Terrapene carolina (Eastern Box Turtle)

Three box turtle carapace (upper shell) fragments were identified (Table 10). It inhabits moist field-woodland fringe environs, often close to water. Box turtles are often used for food.

Crassostrea virginica (American Oyster)

Oysters shells were very common (18) and most of the specimens were complete valves (half shell). Oysters inhabit

marine waters of low to moderate salinity from estuaries to subtidal ocean water. They are a popular food resource and the pulverized shell was often used as mortar mix or fertilizer.

Mercenaria mercenaria (Hard Clam)

Hard clams were less common than oysters (Table 10). This species occupies a restricted environment of high salinity of the tidal flats preferring areas of muddy-sand/sand. They are a popular food resource.

Group J

The assemblage from Group J consisted of 95 bones fragments representing eight identified species (Table 1). The material was in good physical condition but very fragmented.

Bos taurus (Cow)

Cow bones were abundant including isolated teeth, vertebrae and hindleg fragments (Table 11). The teeth were probably refuse from initial butcherings since they are not associated with meaty portions of the body. The hindleg remains were from round and hind-shank roasts (Figure 1).

The limited maturation data from tooth wear patterns indicated that one cow was more than 3 years old at death and another was 2 - 2.5 years old.

Sus scrofa (Pig)

Pig remains were scarce and consisted of only 2 isolated teeth and a mandible (lower jaw) fragment. This material was most likely refuse from initial butcherings.

Ovis aries (Sheep)

Sheep remains (9) consisted of vertebrae and forelimb fragments (Table 11). Two cranial fragments were recorded (Tooth, skull) but were much less common than cow and pig. This was a specific trend for nearly all the assemblages. The vertebrae remains were all from the neck region and, probably, represented refuse from initial butcherings. The forelegs remains were from two fore-shank and on "square-cut" shoulder portion (Figure 3). The shoulder fragment was sawed and the asymmetrical sawing pattern suggested the use of a handsaw.

Sylvilagus floridanus (Cottontail Rabbit)

Four rib and forelimb fragments were identified as cottontail rabbit (Table 11). This is a very common species in the eastern U.S. and inhabits moist open-field, woodland fringe, and woodland environs. The cottontail is a very popular food resource.

Gallus gallus domesticus (Chicken)

Chicken remains (5) represented shoulder and leg elements from back, wing and thigh portions.

Bufo sp. (Toad)

One toad leg bone was identified (Table 11). Toads inhabit moist, forest-woodland environments.

Terrapene carolina (Eastern Box Turtle)

Box turtle remains (8) consisted of shell and limb bones (Table 11). The box turtle inhabits moist field and woodland fringe environs, often near water sources. In many areas, the box turtle is a common food resource.

Kinosternon subrubrum (Mud Turtle).

Seven elements were identified as mud turtle (Table 11). This species is very common from the Middle Atlantic region to the South. It prefers areas of fresh or brackish water, shallow, soft bottoms in slow moving water with ample vegetation. There is little evidence that the mud turtle was eaten.

Features 2-12

There were 9 features with small faunal assemblages from the Grant Tenancy Site. All of the assemblages were small and, individually, they have little interpretive value. Six of the nine assemblages had less than 10 specimens. Thus, they were considered as a unit for the analysis (Table 1).

There was little variation between the feature assemblage and a number of important characteristics were recorded. Most of the assemblages included a comparatively high number of unidentifiable large mammal remains. Oyster shell remains were, also, common in most features (Table 1). Four of the features, also, yielded box turtle remains. Otherwise, very few additional species were recorded in large numbers (Table 1).

Based on the preceding data, the feature assemblages are presented, here, as a simple unit. In Tables 12 to 20, the remains are listed separately, whereas Table 1 shows all the assemblages as a unit with species and specimen counts listed together.

On the whole, the feature assemblage remains were in good physical condition although the material was very fragmented.

The combined assemblages consisted of 101 bones and 14 shell fragments (Table 1). Of the total, 49 (43%) fragments were unidentifiable large mammal bones. The most common identified species were cow, pig, box turtle, and oyster. Sheep material (22) was abundant but only in one feature (F 12/Table 1). The species in all features are discussed, individually, below.

Bos taurus (cow)

Cow remains were scarce (4) and were recovered in only 3 of the 9 features (Tables 1, 16, 17, 20). The elements were isolated teeth, mandible (lower jaw) and shoulder fragments. The bulk of this material was probably initial butchering refuse but one cut scapula (shoulder blade) represented a "blade" pot roast (Figure 1).

Sus scrofa (Pig)

Pig remains were uncommon (5) and were recorded in three of the assemblages (Table 1, 15, 17, 19). This refuse included isolated teeth and forelimb fragments. The teeth probably represents refuse from initial butchering. The

forelimb fragments constituted "picnic" shoulder and "Boston Butt" roasts (Figure 2).

Ovis aries (Sheep)

Sheep remains (22) were only identified in one feature (Table 1, 19). This material consisted, mostly, of vertebrae fragments but, also, one rib and tibia (lower hindleg) shaft. Once again, cranial remains especially teeth, were missing in comparison with those of cow and pig. The vertebrae represented neck and "rack of lamb" and upper loin roasts. Some of the neck vertebrae were from initial butchering since they are not associated with meaty portions and are usually removed and discarded, immediately, with the head. The hindleg specimen was from a hind-shank "leg of lamb" portion (Figure 3).

Sylvilagus floridanus (Cottontail Rabbit)

Only two elements were identified as cottontail rabbit from Feature 12 (Table 1, 19). Cottontails prefer moist field and woodland fringe environs and are commonly hunted as a food resource.

Gallus gallus domesticus (Chicken)

Only one chicken element was identified from Feature 12 (Table 1, 19). This element represented a thigh portion.

Terrapene carolina (Eastern Box Turtle)

Box Turtle remains (17) were identified in 4 assemblages and consisted of shell fragments (Table 1) 16, 18, 19, 20). Box Turtles prefer moist, field/woodland fringe habitats, often located near freshwater. This species is often used as a food resource.

Crassostrea virginica (American Oyster)

Oyster remains (13) were recorded in six of the nine assemblages (Table 1). Most of the remains were complete valves (shell half). Oysters are adapted to saline water in salt marsh to subtidal ocean environs and represents a popular food resource.

Mercenaria mercenaria (Hard Clam)

A single hard clam valve (shell) was identified (Table 1). Hard clams are restricted to saline, tidal flats and, also, represent a popular shellfish food resource.

Discussion and Conclusions

It was apparent that most of the remains from the Grant Tenancy Site represented both food refuse and initial butchering refuse. The entire site assemblage consisted of 2354 fragments including 2140 bones and 214 shells (Table 1). In all, there were 22 species identified and, considering all the assemblages, the most consistently identified remains were those of cow, pig, sheep, chicken, rabbit, box turtle, oyster, and hard clam (Table 1). Pig remains were found in every assemblage and demonstrated the significance of this species as a food source.

As noted the Feature assemblages were analyzed as a single unit due to the small number of specimens in each.

The remains of large domestic mammals (cow, pig, sheep) dominated all the assemblages and these species constituted the bulk of the meat diet. Cow and pig remains were more common than sheep. Also, in all the assemblages, small wild species were common and represented significant supplementary or secondary food resources. Common wild species remains were rabbit, box turtle, oyster and hard clam (Table 1). Chicken remains were also abundant in most assemblages and this species was an important ancillary domestic food source.

The remains of large wild animals, such as white-tailed deer, were not identified, although it is possible that some of the unidentified large mammal fragments (common in every assemblage) represented deer remains.

As noted, the total assemblage yielded 22 species including those of mammals, aves, reptiles, amphibians, pisces, shellfish and crabs.

This collection represented a variety of micro-environments such as meadow/open field, woodland-fringe and freshwater stream. The Group E assemblage exhibited the widest variety of species (18) which represented a diverse range of micro-environments. These included meadow/open-field (cottontail rabbit, meadow vole, box turtle, hawk), woodland fringe (box turtle, cottontail, hawk), woodlands (squirrel, turkey), freshwater (catfish, perch, bass) and marine-estuary/tidal flats (oysters, hard clam). Many of these species were common in a number of the assemblages and indicated that a variety of micro-environments existed near the site. However, although not knowing the exact location of the site, it is likely that the shellfish species were transported from some distance away.

Distribution of Skeletal Elements/Meat Portions

Post-cranial remains were, by far, the most common fragments in every assemblage (Table 2-20). Teeth, especially from large domestic mammals, were the most common type of cranial elements probably due to their dense, resistant construction.

There was significant variation in the distribution of skeletal elements between the large domestic mammals. Cow and pig remains were more common than those of sheep. Cow and pig teeth were very abundant in nearly every assemblage and probably represented refuse from initial butcherings. By contrast, sheep teeth and cranial elements were rare or completely absent in most assemblages. Apparently, sheep skulls were discarded or scavenged without becoming part of the refuse deposit.

There was a considerable difference in the distribution of post-cranial elements and meat portions between the major domestic species. Cow and pig remains represented a wide range of elements in many assemblages, especially those of Group B, C, D, and E which just happen to be the largest collections from the entire site. Much of this material represents refuse from initial butchering such as teeth, jaws, toes and ankle bones. These elements are often removed and discarded during the early stages of the butchering process. Sheep remains, however, were less diversified and, as noted above, teeth/cranial elements were rare or absent and post-cranial remains were restricted to a few body parts.

There was a corresponding difference in the distribution of meat portions between the large domestic species. Cow portions were, consistently, represented by shoulder, chuck, sirloin and round roast meats (Figure 1). The greatest variety of cow meat portions were identified in the Group C assemblage which, also, yielded the widest variety of cow elements. These portions constituted better quality meat cuts. The common pig remains were, consistently, from "Boston Butt" and picnic shoulder cuts as well as "butt" and "shank" half hams (Figure 2). Group E exhibited the widest range of pig meat portions representing all the major parts of the body. The most common sheep portions were foreshank, "rack of lamb", loin, and hind-"leg of lamb" (Figure 3). Again, the widest range of sheep meats were recorded in the Group E assemblage which represented, mostly, better quality meats.

Significant, element and meat portion data were, also, recorded for many smaller species. A wide range of chicken elements was identified in the Group D and E assemblages suggesting the processing of whole carcasses. Common chicken cuts were wings, thighs and legs. A wide variety of rabbit

elements, representing all the major portions of the body, was identified in Group E. Also, near complete box turtle skeletons were recorded in both Group D and E, probably from the processing of whole carcasses. Fish remains, especially from Groups B, E and F, represented, mostly, cranial elements without vertebrae suggesting that only heads were removed and discarded in the refuse.

The preceding evidence clearly demonstrates that the entire carcass of a number of important species including pig, rabbit, chicken and box turtle, were processed at the site.

Only a few of the elements were sawed or cut. Most of the sawed remains were from the Group C assemblage. However, these specimens were not symmetrically sawed and were more indicative of "hand sawing" techniques. Most of the cut marks were the result of axe blows, especially on elements near joints which resulted from initial disarticulation of the animal. Examples were recorded for cow elements in the Group B and C assemblages. A number of vertebrae were split, lengthwise. This resulted from initial butchering where the carcass is cut in two by splitting the backbone from top to bottom. This produces two equal halves of the carcass which is then processed into smaller portions. Most of the split vertebrae were from sheep.

Maturation

Maturation data was recorded, where possible, for the large domestic mammal species. As noted elsewhere, the fragmented condition of the assemblages, significantly, limited the recording of maturation data. However, the limited data indicated important differences between the major species. The evidence suggested that most cows were, at least, 2.5 years old at death. Pigs were, generally less than a year old at death, although, at least, one fetal (less than 2 months) pig was identified. Sheep maturation data was scarce due to limited number of elements for this species. However, the limited evidence indicated that sheep were more than 1 year old at death.

In overview, the faunal remains from the Grant Tenancy Site represented a variety of domestic and wild species from a wide range of micro-environments. Large domestic mammals were the most important food (meat) resources, supplemented by a wide variety of small wild species representing diverse environments. Apparently, many of these species were initially butchered at the site represented by a wide variety of skeletal elements.

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Tables

The following is an explanation of the symbols and abbreviations used in the data Tables. The specimens listed on the Tables are all fragments unless stated otherwise.

The Tables are organized by element and species. The complete scientific name, for each species are used in the text, only. General animal listings are as follows:

- Lg. mam. = unidentifiable large mammal (cow or deer size),
- Med. mam = " " medium " (fox or raccoon size).
- Sm. mam = " " small " (mouse or squirrel size).
- Aves = birds
- Sm. Aves = small bird (robin or sparrow size).
- Lg. Aves = large bird (turkey size).

Several symbols refer to the teeth. They include: I = incisor; C = canine; PM = premolar; M = molar. The distinction between mandibular or maxillary teeth is expressed with subscript numbers - for example:

- M = first mandibular molar
- M = first maxillary molar
- I = first mandibular incisors
- I = first maxillar incisors

References to maturation data are expressed as : (-) = immature and (+) = mature. Also, the symbol "ep" refers to epiphysis - the end of the bone referring to bone fusion, and "dia" refers to diaphysis - the shaft of a bone. Symbols for sawed elements are =[1] and cut or axed elements are =(1). Terms referring to the orientation of limb elements include : px = proximal - the end nearest the trunk or head, and dst = distal - the end farthest from the trunk or head. The designatin of "L" = a left element (L-ulna) and "R" = a right element (R-ulna).

Every assemblage has a number of indeterminable bone fragments. This material is often listed as follows:

- L.B.F. = long bone fragment(s) (leg bones).
- R.F. = rib fragment(s).
- V.T. = vertebrae fragment(s).

Many elements represent symmetrically sawed cross-section bone specimens which are listed as : sec. = sections.

A number of skeletal element terms for Aves, Reptiles, Amphibians and Pisces are different than those of mammals. The common elements are as follows:

Aves (Birds)

- cora. (coracoid) = shoulder element.
- furc. (furculum) = breast or "wish" bone.
- pygo. (pygostyle) = tail bone.
- tarmet. (tarsometatarsal) = lower leg.
- tibio (tibiotarsus) = middle leg.

Turtle

- carap. (carapace) = upper shell.
- plas. (plastron) = lower shell.

Pisces

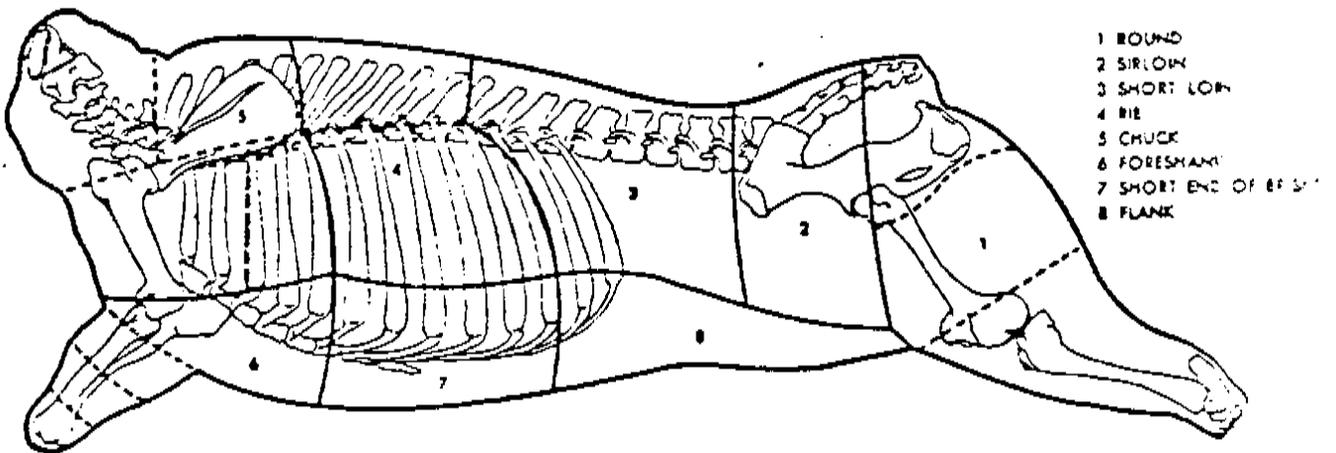
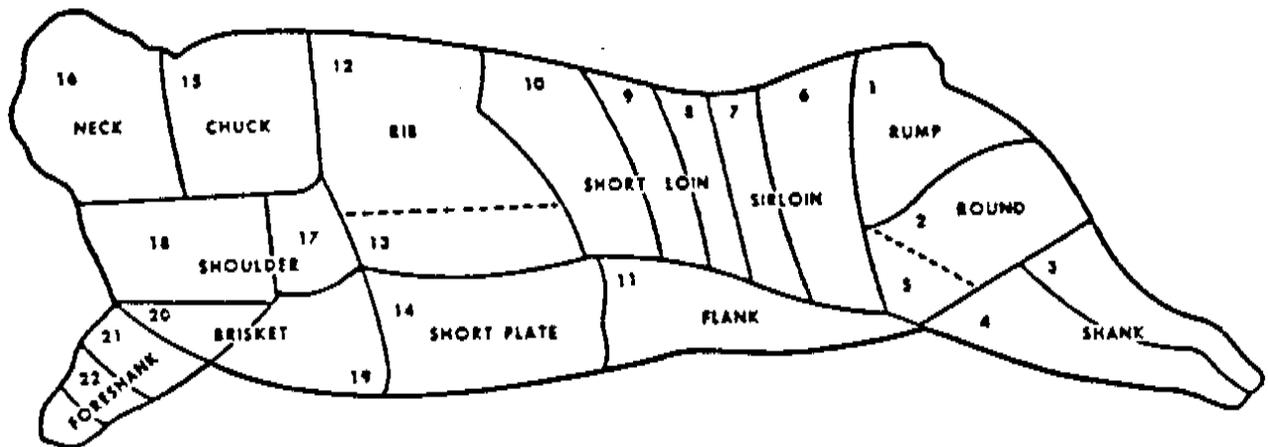
- pect. sp. (pectoral spine).

Table I. Grant Tenancy Sites Distribution of Species

		Group S-C	Group R	Group C	Group D	Group E	Group F	Group G	Group H	Group I	Group J	Feature 2-81	Feature 5	Feature 7	Feature 8	Feature 9	Feature 10	Feature 11	Feature 12	Feature K-360	Feature			
Bos taurus	Cow	24	51	17	10	18	1	-	-	3	11	-	-	-	-	2	1	-	-	1	-	-	-	
Sus scrofa	Pig	14	28	17	17	42	1	5	3	8	2	-	-	-	1	-	1	-	-	3	-	-	-	
Ovis aries	Sheep	1	4	4	10	21	-	-	4	5	9	-	-	-	-	-	-	-	-	22	-	-	-	
Large mammal		47	83	38	37	81	2	10	-	21	22	2	-	8	3	13	2	3	10	-	-	-	-	
Dicotyles aurocapillus	Deer	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Medio mammal		-	3	-	4	3	3	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	
Sylvilagus floridanus	Rabbit	-	1	-	-	22	2	-	1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	
Sciurus carolinensis	Squirrel	-	-	-	1	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rattus spp.	Rat	-	2	-	4	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	
Microtus pennsylvanicus	Vole	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Spermophilus fulvus	Rat	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Small mammal		-	-	-	-	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Callus gallus domesticus	Cup Chick	-	3	-	14	38	1	5	1	-	3	-	-	-	-	-	-	-	-	1	-	-	-	
Meleagris gallopavo	Turkey	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bubo jamaicensis	Hawk	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Avex spp.	Birds	-	-	-	1	31	1	-	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	
Tetraodon carolinus	Box Tort	1	1	20	47	88	-	5	2	3	8	-	-	-	9	-	3	8	1	-	-	-	-	
Emydoidea blandingii	Box Tort	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	
Turtle sp.		-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bufo sp.	Toad	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pleurodeles waltl	Amphibian	-	-	-	-	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Leuciscus sp.	Catfish	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perca flavescens	F. Perch	-	5	-	-	1	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Micropodus sp.	Perch	-	5	-	-	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pomoxis sp.	Fish	-	-	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Callinectes sapidus	Blue Crab	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Decapoda virginica	Oyster	-	36	41	8	21	1	-	-	18	-	6	1	-	3	-	3	1	1	-	-	-	-	
Macoma balthica	Clam	-	21	9	7	10	-	1	-	6	-	-	-	-	-	-	1	-	-	-	-	-	-	
TOTAL: 236		91(5)	608(11)	318(6)	258(9)	696(19)	35(2)	59(6)	15(5)	66(7)	55(8)	6(2)	1(1)	8(0)	7(2)	22(2)	15(4)	9(2)	42(6)	2(1)				

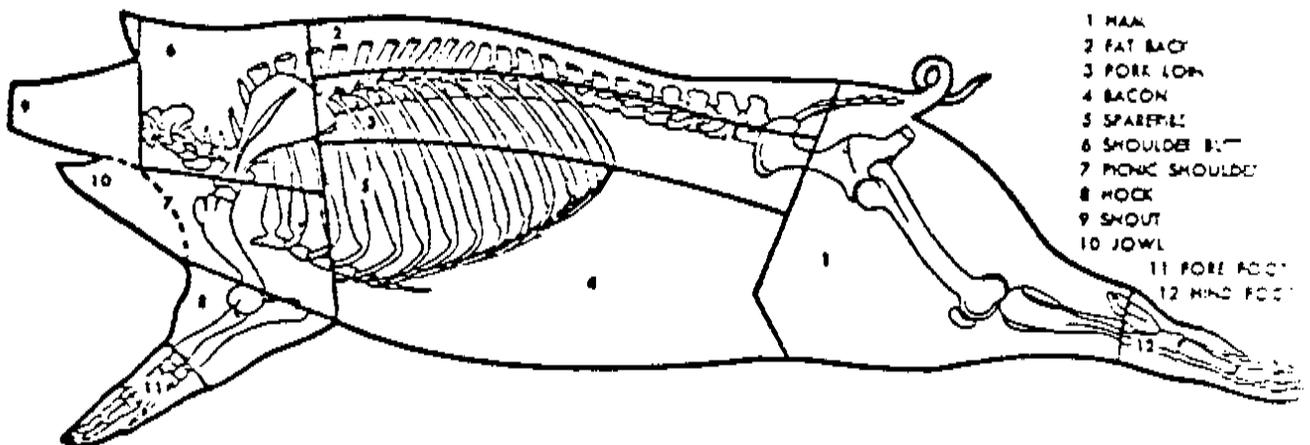
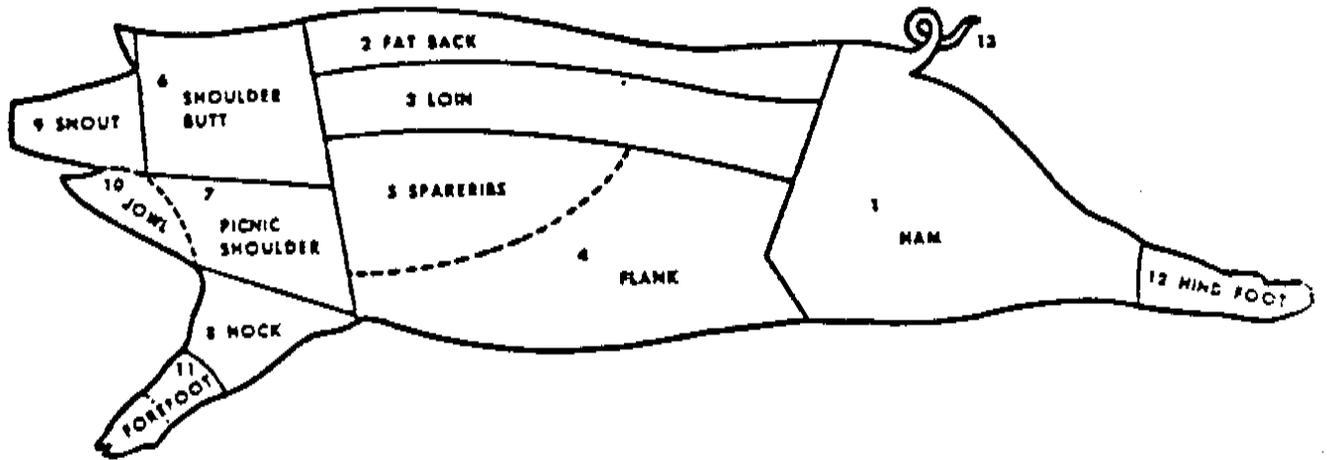
Bos taurus (Cow) Meat Portions.

Figure 1.



Sus scrofa (Pig) Meat Portions.

Figure 2.



Ovis aries (Sheep) Meat Portions.

Figure 3.

