VOLUME II
APPENDICES A-D

ARCHAEOLOGICAL DATA RECOVERY

THE PADDY'S ALLEY AND CROSS STREET BACK LOT SITES (BOS-HA-12/13) BOSTON, MASSACHUSETTS

prepared for

Timelines, Inc.
410 Great Road, B-14
Littleton, Massachusetts 01460

and

Central Artery/Tunnel Project
Bechtel/Parsons Brinckerhoff
One South Station
Boston, Massachusetts 02110

by

Lauren J. Cook
Joseph Balicki

John Milner Associates, Inc.

309 North Matlack Street
West Chester, PA 19380

39 Mill Plain Road, Suite 9
Danbury, CT 06811

August 1996

APPENDIX A

CHAINS OF TITLE

APPENDIX A: CHAINS OF TITLE

PADDY'S ALLEY WEST

1. 1640s

John Oliver's property in Boston

> One house and garden about halfe an Acre bounded with Valentine Hill northeast and southeast: John Pierce and John Knight southwest: and the [Middle] streete northwest

(Record Commissioners 1881b:9).

2. N.d.

John Oliver
to
James Oliver

> Property conveyed by will.

(Record Commissioners 1881b:41-42)

3. April 30, 1647

James Oliver
to
John Jepson, Sr. (Cordwainer)

> House and garden in Boston which formerly was Mr. John Olivers: bounded with Valentine Hill southeast and northeast: the streete, northwest: and John Pierce and John Knight southwest: as also the lott of Thomas Marshall which for one rod length abutteth on the southwest at the southerly end of John Knights and John Pierces lott

(Record Commissioners 1881b:41-42)

4. December 18, 1685

John Jepson, Sr. (Cordwainer, Boston)
to
John Jepson, Jr. (House Carpenter, Boston)

> A piece or parcel of Land and wharfe Situate Lyeing and being in Boston aforesaid neare unto the Mill bridge, and a way or passage Eleven foot in breadth or thereabouts leading from the Milbridge Street to the sd Land and Wharfe, being butted and bounded Southwesterly by the Mill Creeke, Southeasterly by the land formerly in the possession of Capt Thomas Lake and [blank] Paddy now or late in the Tenure and occupation of William Taylor and [blank] Paddy, and Mary Lake, North Easterly with the Land now or late in the possession of William Whitwell, and Northwesterly by the house and Land of Sarah Leveritt the Relict of John Leveritt Governr late Deceased and the aforesaid way or passage Eleven foot wide, and the Land of the abovesd John Jepson Senr.... Measureing in breadth by the Mill creeke or ffronte, as well as att the reste fforty two foot or thereabouts and in lengh One hundred ffifty five foot
> £ 80 (current money of New England)

(Suffolk Deeds 9:460-461)

Samuel Nanny, a neighbor, is one of three witnesses to the deed

5. February 16, 1696/7

John Jepson, Jr.
to
Benjamin Rolfe (Yeoman, Newbury)

The land granted to said John Jepson by his father
(Suffolk Deeds 14:322)
Jepson married Rolfe's daughter Apphia on April 1, 1696.

6. February 26, 1696/7

Benjamin Rolfe (Yeoman, Newbury)
to
John Jepson (House Carpenter, Boston)
Apphia (Rolfe) Jepson (John's Wife)

> All that piece or parcel of Land and Wharffe adjoyning Scituate lying and being in Boston aforesd. near unto the Mill bridge with a way or passage Eleven foot in breadth or thereabouts leading from the Mill bridge Street to Sd. Land or Wharffe & said Land is butted and bounded South Westerly by the Mill Creek, South Easterly by the Land formerly in the posession of Capt. Thomas Lake and Mr. Paddy and of their heirs, North Easterly with the Land late belonging to Wm. Whitwell dec'ed now in the possession of Gilbert Bant and North Westerly with the Land belonging to the heirs of John Leverett Esqr. dec'ed and the aforesaid way or passage of Eleven foot wide lying betwixt the Land belonging to the heirs of said John Leverett Esqr. and the Land late in the possession of John Jepson Senr. dec'ed Father of the abovesd. John Jepson, measuringin breadth against the Mill Crek Forty two foot more or less, and in length One hundred fifty and five foot and carryes the same breadth in the Rear.

(Suffolk Deeds 30:64)
This deed was not filed until November 16, 1715, two years after Apphia Rolfe had died. The deed stipulates that the property goes to the surviving spouse and to the heirs of the union, if any. Clearly, Rolfe intended the deed as protection for his daughter and her children.

7. March 24, 1728/9

Estate of John Jepson, Jr.
to
Benjamin Jepson (Barber, Boston)

> Item That the said Benjamin Jepson his heirs and assigns for Ever shall have hold and enjoy as his and their fourth part or Equal share of the said Dwelling house and Land with the appurtenances, that part thereof which is Twenty one feet wide in the rear being the South Easterly side of the Garden and Extending from thence fifty three feet of that breadth, then running along the Eight foot passage fifty three feet to the six foot way, then to Paddys alley seventeen feet and from that to the Rear of the Premises one hundred and fourteen feet holding fifteen feet breadth from the rear of the house to The six foot way. Together with the Barn thereon standing and Priviledge of the said Eight foot way well and Pump to Lye and be in Common [with William and Mary Jepson] as aforesaid and all other priviledges and appurtenances thereto belonging.

(Superior Court Records, Suffolk County, Case 22433)
Upon petition to the court, the property was divided between John (III), William, Benjamin, and Mary Jepson.

8. March 27, 1728/9

Benjamin Jepson (Barber, Boston)
to
Elisha Hedges (Taylor, ____)

All that certain Dwelling and _____ consisting of two Tenements with the land whereon the _____ doth stand, and thereto belonging situate lying & being _____ Boston aforesaid near the Mill Creek and is butted and _____ Northwesterly on Land of Mary Jepson there measg. _____ three feet, Northerly on Land of the heirs of Capt Gilbert Bant there measuring twenty one feet, Southerly on _____ land of John Carnes in part and partly on that which _____ Elisha Hedges there measuring one hundred and fourteen _____sterly on the six feet passage way there measuring seventeen _____ Northwesterly on an eight feet passage way _____ six feet, or however otherwise bounded or reputed [Also shares right-of-way in the "eight feet way" and a well and pump with William Jepson and Mary Jepson]
£ 200
(Suffolk Deeds 43:157)

9. January 19, 1730

Elisha Hedges (Taylor, Shrewsbury)
to
Gershom Keys (Trader, Shrewsbury)

Property description identical to above
£ 700
(Suffolk Deeds 45:80)

10. October 23, 1731

Gershom Keyes (Shopkeeper, _____)
to
Benjamin Townsend (Husbandman, Worcester)

All that certain Dwelling and _____ consisting of two Tenements with the land whereon the _____ doth stand, and thereto belonging situate lying & being _____ Boston aforesaid near the Mill Creek and is butted and _____ Northwesterly on Land of Mary Jepson there measg. _____ three feet, Northerly on Land of the heirs of William _____ deceased there measuring twenty one feet, Southerly on _____ land of John Carnes in part and partly on that which _____ Elisha Hedges there measuring one hundred and fourteen _____sterly on the six feet passage way there measuring seventeen _____ Northwesterly on an eight feet passage way _____ six feet, or however otherwise bounded or reputed [Also shares right-of-way in the "eight feet way" and a well and pump with Mary Jepson]
£ 800
(Suffolk Deeds 46:90)

11. March 17, 1732

Benjamin Townsend (Mariner, _____)
to
Gershom Keyes (Shopkeeper, _____)

Bounded as above
£ 800
(Suffolk Deeds 47:110)

12. February 17, 1733

Gershom Keyes (Shopkeeper, _____)
to
Hugh Hall, attorney for Thomas Woolford (Merchant, Barbados)

Dwelling house with two tenements, bounded as above
£ 550
(Suffolk Deeds 47:117)

13. March 14, 1738

Thomas Woolford (Merchant, _____)
to
Leonard Lockman (Practitioner in Physick & Surgery, _____)

Power of attorney; no property changes hands
(Suffolk Deeds 57:194)

14. March 26, 1739

Leonard Lockman, attorney for Thomas Woolford (Barbados)
to
William Douglas (Physician, _____)

Dwelling house with two tenements, bounded as above
£ 550
(Suffolk Deeds 57:210)

15. February 25, 1756

Estate of William Douglas
to
Cornelius Douglas (William's Nephew)

"Another messuage near Mill Creek tenanted by Bird and Lord purchased from Leonard Lockman"
(Suffolk Deeds 88:76)

16. April 24, 1756

Cornelius Douglas (Cabinetmaker, Scotland)
to
William Simpkins (Goldsmith, Boston)

Dwelling house, consisting of two tenements, bounded as above
£ 60:6:8
(Suffolk Deeds 88:170)

From this point there is a gap in the title, until 1782. There is no record of Simpkins selling the property or disposing of it through probate.

17. April 4, 1782

Peter Edes (Printer, _____)
Mary Edes (Peter's wife)
Mary Walker (Spinster, _____)
to
John Dinsdall (_____, _____)

Property is described as being near Mill Creek, bounded northwest on land formerly of Mary Jebson (53 feet); north on the heirs of William Bant (21 feet); south on land formerly of John Carnes and land formerly of Elisha Hedges (114 feet); west on a six-foot passageway (17 feet); northwest on an eight-foot passageway (53 feet); southwest on said six-foot passageway
£ 60
(Suffolk Deeds 144:70)

18. July 20, 1784

John Dinsdall (Trader, _____)
to
Jonathan Williams (Esquire, _____)

Same description as above
£ 60
(Suffolk Deeds 144:72)

19. July 2, 1785

Jonathan Williams (Esquire, _____)
to
John Williams (Son of Jonathan)

Same description as above
£ 60
(Suffolk Deeds 149:210)

20. January 2, 1786

John Williams (Son of Jonathan)

to
Jonathan Williams (Esquire, _____)

Property is bounded as follows; southwest on Paddy's Alley (15 feet); northwest on Joseph Adams; northeast on Ezekiel Goldthwait (15 feet); southwest on said Jonathan Williams
£ 60

(Suffolk Deeds 154:116)

21. November 29, 1794

Jonathan Williams (Esquire, Boston)
to
Joseph Hall (Esquire, Boston)

A certain piece of land I purchased of John Dinsdall & bounded Northwesterly on land of Mary Jepson there measuring fifty three feet, Northerly on land of the heirs of William Bant deceased there measuring twent one feet Southerly on land formerly belonging to John Carnes in part & part on land formerly belonging to Elishe Hedge there measuring One hundred & fourteen feet, westerly on a six feet passage there measuring seventeen feet, Northwesterly on the [illegible] passage way there measuring fifty three feet & Southwesterly again on said passageway of six feet [Also includes right-of-way for eight-foot passage way, as well as the Carnes Property and four other properties including the following] "Also a Certain piece of land which I purchased of John Williams" described above in deed no. 20. All of the property is subject to a £ 1700 mortgage to Jerathmeel Bowers (Esquire, Swansea).
£ 500

(Suffolk Deeds 179:204)

It appears here that both of the properties mentioned above are the same; that is, the property described in no. 20 is part of the first property described here, minus the section previously conveyed by John Williams to Adams (Suffolk Deeds 179:280), which is part of the first lot. In short, this deed not only sells the same land twice, it also sells land already sold in another deed!

22. July 2, 1795

Joseph Hall (Esquire, Boston)
to
Isaac White (Trader, Boston)

Land and buildings, bounded on the Southwest "on Centre Street, as the fence now stands;" Northwest on Joseph Adams (85 1/2 feet); Northeast on land formerly of Ezekiel Goldthwait (30 feet); [Southeast] on land sold to John C. Jones, Esq. (93 feet)
£ 450

(Suffolk Deeds 180:39)

This transaction unites the west and east sides of the Paddy's Alley site.

PADDY'S ALLEY EAST

23. June 6, 1712

Anne Cotton (Widow, Hampton, NH)
John Watts (agent to the Honorable Sir Byby Lake, Briain)
to
Samuel Wentworth (Boston, Merchant)

In the Street now called Ann Street with all the Land that was formerly the said Capt. Thomas Lakes Scituate and lying in or near the said Street on both sides of the same being butted and bounded as Followeth Vizt. Northwesterly on the Land of John Jepson Housewright, and there measuring Eighty nine feet or thereabout, Northeasterly upon Land of [blank] Nanny, in the Occupation of Joshua Woods, Widow Belcher and Davis till it comes to the Street aforesaid, upon which Line Vizt. From the Northerly Corner in the Rear of the garden till it comes to the Street it measures One hundred ninety feet or thereabout, and then Crossing the Street... [describes portion of the property east of Ann Street] ...And above the said Street South Westerly upon houses and Land belonging to and improved by Edward Thomas and Joseph Dowding which was formerly the Estate of the said Payton and Paddy (according to the true and antient bounds or Line between the said Payton and Paddy) upon which Line Vizt. From the said Street until it comes up to and meets with the Westerly corner of the said Garden in the Rear of the premises measure Two hundred and four feet more or less or however otherwise bounded or reputed to be bounded...

£ 1,800

(Suffolk Deeds 26:180)

24. August 22, 1717

Samuel Wentworth (Merchant, Boston)
to
Nathaniel Henchman (Merchant, Boston)

Bounded identically to deed above, but does not include section of property east of Ann Street. A stone messuage and four brick tenements are mentioned for the first time.

£ 2,159

(Suffolk Deeds 32:51)

25. December 14, 1726

Nathaniel Henchman (Merchant, Boston)
to
John Carnes (Brazier, Boston)

All that Certain Stone Messuage or Tenement and land which he purchased of Samuel Wentworth & Abigail his wife with the four brick Tenements before the Same two on Each side the arch Situate and lying in Anne Street so called in Boston aforesaid aforesaid [sic] Measuring about fifty six feet more or less upon the said Street Northerly on land now or late of John Jepson there measuring Eighty nine feet more or less Northeasterly on land late of One Nanny in the Occupation of Job Coit & others till it come to the Street aforesaid upon which line Vizt. from the Northeasterly [sic] corner in the rear of the Garden till it comes to the other Street it measures One hundred and Ninety feet on Southerly on the house and land belonging to Andrew Tyler lately Improved by Edward Thomas Dec'ed formerly the Estate of Payton & Paddy measuring from the said Street on that line until it comes up to and meet with the Corner of the sd Corner on the rear Two hundred & Twenty feet more or less...

£ 2,100 Lawful money of New England

(Suffolk Deeds 40:164)

Henchman took back a mortgage on the property for £ 1,500 (Suffolk Deeds 40:165). That mortgage was cleared in 1750. Carnes remortgaged with Henchman almost immediately, a debt that was not settled with Henchman's heirs until Carnes' estate paid £ 248:14: in 1760 (Suffolk Deeds 78:247; Suffolk Probate # 12299).

26. March 6, 1760

John Carnes
to
Elizabeth Carnes (Mother)
Dorthy Carnes (Wife)
John Carnes, Jr. (Son)
Edward Carnes (Son)
Thomas Carnes (Son)
Joseph Carnes (Son)
Sarah Cross (Daughter)
Elizabeth Glentworth (Daughter)
Mary Carnes (Daughter)
Ann Chandler (Daughter)
Hannah Carnes (Daughter)
Jane Carnes (Daughter)
Hepzibah Carnes (Daughter)

By will, Carnes directs that his mother and widow be provided for, and that his estate, real and personal, be divided evenly between his eleven children. Carnes died on March 10, 1760
(Suffolk Probate # 12299)

Carnes' first inventory, on March 21 1760, listed the value of the Ann Street property at £ 1,000. A second inventory, taken May 15, 1761, valued it at £ 1,066:13:4.

27. February 10, 1761

Estate of John Carnes (by Suffolk Co. Probate Court)
to
Dorothy Carnes (Widow)

For her Dower or Thirds of her said Husband's Real Estate Two Brick Tenements and Lands situate in Ann Street in Boston aforesaid now in the Occupation of Samuel Ross and John Bradford (being part of the deceased's Mansion house and land) boounded and described as follows, Vizt. Southeasterly on the said Street there measuring from the Alley or Passage way leading up to the Stone house to the Land now or late of Job Coit dec'ed twenty five feet more or less, Northeasterly on the said Coits Land there measuring from the Street One hundred and sixty nine feet more or less, Northwesterly in the Rear on a Wooden Warehouse and Land belonging to said Estate there measuring from the street Twenty feet, and southwesterly on the said deceaseds Mansion house and land measuring on the Passage way leading up to the House from the street to the back of the Brick Tenement herein set off Twenty one feet and an half, and from thence to run on a bevel line Thirty six feet to a Post set up by us at Six feet distance from the Corner of the Stone house, where the land hereby set of to the said Dorothy is to increase Eleven feet and an half, and from the said Post to run near upon a Strait line till it comes near to the said Wooden Warehouse, One hundred and twenty nine feet more or less...

(Suffolk Probate # 12299)

28. May 15, 1761

Dorothy Carnes (Widow)
Edward Carnes
Thomas Carnes
Joseph Carnes
Sarah Cross
Elizabeth Glentworth

Mary Carnes
Ann Chandler
Hannah Carnes
Jane Carnes
Hepzibah Carnes
(All by Suffolk Co. Probate Court)
to
John Carnes, Jr. (Clerk, Rehoboth, MA)

The real estate, with rights of reversion after Dorothy's death, and Dorothy's dower or thirds.
PRICE: £ 68:15:9 to each sibling within one year, and another £ 36:7:3 after Dorothy's death.
For Dorothy, the interest on £ 400 for the rest of her life.

(Suffolk Probate # 12299)

The court realized that it would be inconvenient to divide the estate between eleven children, so they arranged for the heirs to sell to John Carnes, Jr., so that he could turn around and sell the property, dividing the proceeds.

29. May 19, 1761

John Carnes (Clerk, Rehoboth, MA)
to
Jonathan Williams (Merchant, Boston)

Described as in number 25, above, but bounded on the north by William Simpkins, northeasterly on land "late of Nanny, now of William Scot Edward Marion and the heirs of Viscount", southerly on the heirs of Andrew Tyler and land of William Scot.
£ 1,066:13:4 lawful money of the province

(Suffolk Deeds 96:126)

Carnes sells "two full third parts, and the reversion in and of the other third part" in the estate.

30. [date not xeroxed]

Dorothy Carnes (Widow, Boston?)
to
Jonathan Williams (Merchant, Boston)

All my Right Title Interest Dower and _____ unto the Stone Messuage or Tenement with the _____ thereto belonging particularly mentioned & described _____ side written.
[price not xeroxed]

(Suffolk Deeds 96:127)

31. November 29, 1794

Jonathan Williams (Esqire, Boston)
to
Joseph Hall (Esquire, Boston)

The Paddy's Alley East lot is essentially described and bounded as number 29, above, but the transaction also includes considerable other land in the neighborhood, including Paddy's Alley West.
£ 500 lawful money

(Suffolk Deeds 179:204)

This is the same transaction as number 21, above. For the subsequent history of the property, see number 22, above.

CROSS STREET BACKLOT

1. 1640s

Valentine Hill

Owned extensive land on the west side of Cross Street, around onto what were Ann and Middle Streets, including CBL property.

(Record Commissioners 1881b:47)

2. September 25, 1648

Valentine Hill
to
Richard Straine

one acre of land in Boston, be the same more or lesse, being bounded on the southwest with Mr. Nathaniel Eldred: Mr. John Oliver and the high wayes northwest and northeast: Arthur Perry and the greate Cove southeast

Price not recorded

(Record Commissioners 1881b:47)

3. Between September, 1648 and September, 1650

Richard Straine
to
Paul Allistre

Property won in unspecified court case

(Record Commissioners 1881b:40).

4. September 16, 1650

Paul Allistre
to
Robert Nanney

His dwelling house in Boston, taken in execution of a Judgmt. against Rich: Straine, bounded with the land of Thomas Lake southwaest: Arthur Perry northeast: Robert Wing northwest: and the cove southeast, (being in breadth 31 foote as appeares by the apprisement), together with the land and wharfe to the sd. house belonging

Price not recorded

(Record Commissioners 1881b:40)

5. April 19, 1663

Robert Nanney (Merchant, Boston)
to
John Wheelright (Minister, Salisbury)
Samuel Wheelright (Gentleman, Wells, ME)

Indenture for the purpose of putting his property in trust for his wife Katherine and his children Samuel and Mary. The Boston property is described as "One dwelling house in Boston together with the Land and wharfe thereunto appteining being bounded on the Southwest with Land of Thomas Lake, Arthur Perries Lot North East, Robert Wings Lot Northwest, and the Cove Southeast." Also conveys extensive lands in Wells, ME

(Suffolk Deeds 7:171-172)

6. August 22, 1663

Robert Nanney
to
Katherine Nanny

I give unto my loving wife Katherine Nanny one third of the rest of my estaite after the debts and legasys & funeral charges be satisfied...and in caise of the death of any of my children the estaite of such childe or children to fal to my wife who I leave to be exequitrix of this my last will...

(Suffolk Probate # 348)

Inventory describes the property at this time as "The Dwelling house, ware house & wharffe, yards & other prilidges belonging to the house neare the drawe=bridge _ _ _ [£] 300"

7. March 15, 1690

Mary Nanney Dyer, Katherine's daughter, who married Benjamin Dyer March 10, 1679/80, dies in Boston.

(RCCB 9:193)

8. 1691

Estate of Samuel Nanney, Katherine's son, probated in Boston.

(Suffolk Probate # 1905)

9. 26 February 1715/16

Katherine Nanney Naylor
to
Tabitha Naylor Peake
Lidia Naylor Amy (Widow, Boston)

In probate.

(Suffolk Probate # 3718)

Katherine Nanney Naylor's two children by Nanney (Mary and Samuel) are both dead, so the property passes to her two children by Edward Naylor, despite a challenge by Mary's widower, Benjamin Dyer.

Inventory of remainder of Robert Nanny's estate at this time describes the property as "One House and Land Fronting upon Ann Street Boston.....£ 600" (Suffolk Probate # 348)

10. January 18, 1716

Lidia Amy (Widow, Boston)
to
Job Coit (Son-in-law, Joyner, Boston)

One full quarter or Fourth part of all that Dwelling house and Land Situate in Boston aforesaid in the present Tenure and Occupation of John Smith, Fisherman, bounded Easterly on Ann Street there measuring thirty five feet more or less, Westerly on Land of Capt. Gilbert Bant there measuring Fifty two feet more or less, Northerly on Land of Samuel Mattocks and others, and Southerly on Land of Samuel Wentworth, measuring in length from Front to Rear One hundred eighty eight feet more or less [Also one half part of all land in Wells, ME]
10 shillings

(Suffolk Deeds 31:6)

11. January 19, 1716

George Peake (Netbraider, Truro)
Tabitha Peake (His wife, daughter of Katherine Naylor alias Nanney)
to
Job Coit (Joyner, Boston)

"One full moiety or half part" of property bounded and described as above
£ 120

(Suffolk Deeds 31:7).

12. January 8, 1741

Job Coit (Boston, Cabinetmaker)
to
Lydia Coit (Wife)

Item I give and bequeath unto my well beloved wife Lydia Coit one full third part of my Estate both Reall and Personall To be holden by her for and during her Natural life.

(Suffolk Probate # 7704)

Will proved February 2, 1741. Inventory dated September 23, 1742 describes the property as "the house and Land.....£ 500."

13. June 27, 1743

Lydia Coit (Widow, Boston)
to
Philip Viscount (Mariner, Boston)

A Certain peice or parcel of Land situate lying and being in Boston aforesaid and is the Rear part of the Estate belonging to the heirs of Job Coit dec'd and is Butted and Bounded Easterly on Land of said Job Coits heirs there measuring Forty nine feet five inches be the same more or less and Runs on this line from said Viscounts land to Land of Capt. John Carnes Southerly on said Carnes Land there measuring Thirty two feet Eleven Inches, Westerly on Land of Mr. William Bant there measuring Forty nine feet five Inches and Northerly on Land of the heirs of Alexander M. Gregory and said Viscount there measuring Thirty Six feet or however otherwise bounded or

reputed to be bounded...
£ 75
(Suffolk Deeds 70:55)
Conveys the west end of the property, which contains the excavated portion of the site. With his house lot to the north, purchased in 1728, this gives Viscount a property that extends south from Cross Street and then turns to the west behind and south of the property to the west along the street in an reverse "L" configuration.

14. June 28, 1743

Joseph Coit (Joyner, Boston)
to
Philip Viscount

All my right title and interest of in and to the aforegranted premises in his posession now being...
10 *s*
(Suffolk Deeds 72:168)
Confirms # 13, above.

15. May 6, 1745

Nanny Coit (Spinster, Boston)
to
Philip Viscount

All my right title and interest of in and to the aforegranted premises in his posession now being...
10 *s*
(Suffolk Deeds 72:168)
Confirms # 13, above.

16. October 8, 1751

Philip Viscount (Mariner, Boston)
to
Dorcas Viscount (Wife)

Item I also Give and bequeath unto my said wife Dorcas the whole Income and Improvement of all my House Lands & Real Estate in Boston during her natural Life, if she so long continues my Widow...

Item At and upon the Decease or Marriage of my said wife which shall first happen,, I then Give and bequeath the House & Land in Cross Street wherein I now dwell unto my son James Viscount To hold the same to him his heirs & assigns forever...

(Suffolk Probate # 9847)
Will Dated September 12, 1751. Viscount also wills Dorcas "my four Negroes."

17. June 2, 1769

Dorcas Viscount (Widow, Boston)
to
Philip Viscount (Housewright, Boston, her grandson)

All the rest residue and remainder of my Estate, Real, Personal and Mixed...

(Suffolk Probate # 14478)

Will dated May 13, 1769. James is not mentioned in the will, and presumably has died, the property reverting to Dorcas. The inventory of her estate makes no mention of the property or the slaves, but number 18, below, indicates that the property passed to Philip.

18. August 23, 1769

Philip Viscount (Housewright, Boston)
to
Thomas Capron (Taylor, Boston)

> [Conveys property bounded north by Cross Street, east by Thomas Capron, west by Benjamin Homer, and south by the lot described below]
> Also a certain piece of land adjoining to the rear of the above described land as follws vizt Easterly on land late belonging to the heirs of Job Coit dec'ed there measuring forty nine feet five inches, Southerly on land of Jonathan Williams formerly John Carnes's there measuring thirty two feet eleven inches Westerly on land of Ezekiel Goldthwait formerly William Bants there measuring forty nine feet five inches and Northerly on land formerly belonging to Alexander M. Gregory in part and on the above described land in part measuring on this line thirty six feet be the same measures more or less, it being the same land that my said grandfather bought of Lydia Coit...
> £ 153:06:08 for two lots

(Suffolk Deeds 115:141)

19. April 3, 1772

Thomas Capron (Tailor, Boston)
to
Benjamin Homer (Mariner, Boston)

> A Certain Peice of Land, bounded and measures as follows fifty feet and five Inches, North East and by East on the Land of Ezekiel Goldthwait Esqr fifty feet and five Inches, South West and by West, on the land of said Capron, Sixteen and six Inches, North West on the land of Jonathan Williams Esqr, And Eighteen feet and Six inches South East on the Land of said Benjamin Homer.
> £ 26:13:04

(Suffolk Deeds 172:253)

This conveys the western half of the lot described in number 18 above, to Homer, giving him the portion of the lot behind the property that he owns along Cross Street.

20. March 29, 1784

Job Prince (Merchant, Boston)
Benjamin Cobb (Distiller, Boston)
Benjamin Homer (Merchant, Boston)
Ruth Homer (Spinster, Boston)
to
Samuel White (Yeoman, Boston)

> [Conveys property bounded north by Cross Street, east by Thomas Capron, west by Benjamin Homer, and south by the lot described below]
> £ 300

A Certain Peice of Land, bounded and measures as follows fifty feet and five Inches, North East and by East on the Land of Ezekiel Goldthwait Esqr fifty feet and five Inches, South West and by West, on the land of said Capron, Sixteen and six Inches, North West on the land of Jonathan Williams Esqr, And Eighteen feet and Six inches South East on the Land of said Benjamin Homer. £ 26:13:04

(Suffolk Deeds 172:253)

This conveys the western half of the lot described in number 18 above, to Homer, giving him the portion of the lot behind the property that he owns along Cross Street.

APPENDIX B

STRATIGRAPHIC ANALYSIS

HN[1]	SITE	SOIL DESCRIPTION	COMMENTS	PROVENIENCE	PHASE	MCD[2]	TPQ[3]
1	BOS-HA-12 West BOS-HA-12 East BOS-HA-13	Modern asphalt and bedding.	Mechanically removed at start of the excavation.	1.1, 2.1, 3.1, 4.1, 5.1, 6.1, 8.1, 9.1, 10.1, 13.1, 14.1, 16.1, 17.1, 20.1, 21.1, 22.1, 36.1, 37.1	IX		
2	BOS-HA-12 West	10YR4/2 dark grayish brown clay mottled with 15% 10YR4/4 dark yellowish brown sandy loam, 10% 10YR8/1 white ash and 5% 5Y3/2 dark olive gray silty clay; bricks; gravel; asphalt	Disturbed matrix; destruction debris; modern artifacts; asphalt	1.2, 2.2, 5.2, 6.2, 9.2, 10.2 13.2, 13.3, 13.4(F17), 14.2, 14.3, 14.4, 14.5, 14.7, 17.2 18.2	VII	1780	1903
3	BOS-HA-12 West	5YR3/2 dark olive gray clay; bricks, sand; gravel	Twentieth century destruction debris	1.3, 2.3, 5.3, 6.3, 9.3, 10.3, 13.5	VII	1765	1860
4	BOS-HA-12 West	10YR7/1 light gray sandy loam mottles with 50% 10YR6/1 gray granular sand; brick; building debris	Twentieth century destruction debris	1.4, 2.4, 5.4	VII	1746.5	1820
5	BOS-HA-12 West	5Y3/2 dark olive gray fine sandy clay mottled with 10% 5Y5/3 olive fine sandy clay; brick; mortar	Garden matrix	1.5, 1.6, 1.7, 1.8,2.6, 2.7 5.5, 5.6, 5.7, 5.8,6.4, 6.5 9.4, 9.5,10.4, 10.15, 13.6, 13.7	IV-3	1733.5	1903
6	BOS-HA-12 West	5Y2.5/2 black silty clay	Buried plow zone	1.9, 1.10, 1.12, 5.9, 5.10, 9.6, 13.8	I	1713.7	1725
7	BOS-HA-12 West	5Y5/3 olive clay loam mottled with 15% 5Y7/4 pale yellow clay loam; charcoal; brick; gravel	Fill	1.11	I	1701.1	1690

HN[1]	SITE	SOIL DESCRIPTION	COMMENTS	PROVENIENCE	PHASE	MCD[2]	TPQ[3]
8	BOS-HA-12 West BOS-HA-12 East	5Y5/3 olive silty clay; weak sub-angular blocky structure; iron inclusions	Subsoil	1.13, 5.11, 3.11, 10.14, 16.13, 20.7, 20.8, 20.17, 21.13, 36.15, 37.9	Natural		
9	BOS-HA-12 West		Feature 16 Builder's Trench		IX		
10	BOS-HA-12[5]		Feature 16. Structure. Two wood posts, 3 wood planked sides, lintel to building.		IX		
11	BOS-HA-12	5Y8/1 white coarse sand mortared bricks; 10YR4/1 dark gray sandy loam; gravel	Feature 16. Privy fill. 19th century fill removed with shovels.	17.5, 17.6, 17.7, 17.8	IX	1776.1	1860
12	BOS-HA-12	10YR3/3 dark brown sandy loam mottled with 15% 5GY4/1 dark greenish gray	Feature 6. Fill in Builder's trench to 19th century foundation.	20.3, 20.8,21.3, 21.6 22.4, 22.5, 22.11,36.5	IX	1759.4	1790
13	BOS-HA-12		Feature 6. Builder's trench for nineteenth century foundation		IX		
14	BOS-HA-12		Feature 10. 19th century foundation wall		IX		
15	BOS-HA-12 West		Feature 7. Two parallel wood boards	2.5	V		
16	BOS-HA-12 West	5Y5/2 olive gray sandy clay mottled with 10% 5Y5/3 olive sandy clay and 10% 5Y5/6 olive sandy clay.	Possible trench marking property boundary	2.8, 2.11, 2.12, 6.7, 6.9, 6.14, 10.5, 10.8, 10.10, 14.9, 14.11, 14.12	III	1720.6	1842

HN[1]	SITE	SOIL DESCRIPTION	COMMENTS	PROVENIENCE	PHASE	MCD[2]	TPQ[3]
17	BOS-HA-12 West	5Y4/2 olive gray sandy clay	Feature 20. Fill matrix covering the feature	2.9, 2.10, 6.6, 6.10	IV-1	1723.8	1770
18	BOS-HA-12 West	5Y2.5/2 black silty clay mottles with 10% 5Y3/2 dark olive gray silty clay; ash and charcoal	Feature 20. Matrix associated with privy use, outside of privy box.	2.13, 2.14, 2.15, 2.16, 2.17	IV-1	1716.3	1700
19	BOS-HA-12 West		Feature 33. Post hole and mold associated with privy Feature 20 superstructure.		IV-1		
20	BOS-HA-12 West	5Y2.5/2 black silty clay	Feature 33. Post mold associated with privy (Feature 20) superstructure Post hole fill	2.18	IV-1		
21	BOS-HA-12 West		Feature 33. Post hole associated with (Feature 20) privy Post mold fill	2.19	IV-1		
22	BOS-HA-12 West		Feature 34. Post hole associated with (Feature 20) privy superstructure.		IV-1		
23	BOS-HA-12 West	5Y2.5/2 black silty clay mottled with 50% 5Y3/2 dark olive gray silty clay.	Feature 34. Post hole fill.	2.20, 10.6	IV-1		
24	BOS-HA-12 West	2.5YR2.5/0 black loam; 5Y3/2 dark olive gray clay	Feature 20. Privy box fill, fecal matter	6.11, 6.12, 6.13, 6.15	IV-1	1722.7	1700
25	BOS-HA-12 West		Feature 31. Possible post hole		VII		

HN[1]	SITE	SOIL DESCRIPTION	COMMENTS	PROVENIENCE	PHASE	MCD[2]	TPQ[3]
26	BOS-HA-12 West	10YR2/1 black sandy loam; stone and brick	Feature 31. Post hole fill	6.16	VII	1735	1770
27	BOS-HA-12 West		Feature 20. Privy superstructure	6.8	IV-1		
28	BOS-HA-12	Feature 2	19th century brick footer		IX		
29	BOS-HA-12 East	10YR2/2 very dark brown sandy clay; architectural debris	Twentieth century destruction debris	3.2, 4.2, 8.2, 36.2, 37.2	VII	1750	1800
30	BOS-HA-12 East	2.5Y3/2 very dark grayish brown sandy clay between bricks	Feature 18/22 (CU 17). Brick paving that represents exterior of building (Feature 14/15)	3.3, 36.3	V	1734.6	1740
31	BOS-HA-12 East	10YR2/2 very dark brown sandy clay	Carnes refuse midden	3.4, 3.5,4.3, 4.4, 8.3, 8.4, 36.4, 36,6, 36.7, 37.6	IV-3	1728.7	1790
32	BOS-HA-12 East	5YR5/2 black silty clay mottled with 15% 5Y/42 olive gray silty clay	Carnes refuse midden	3.7, 4.5, 8.5, 36.6, 36.7, 36.9, 36.10, 37.7, 37.8	III	1720.7	1762
33	BOS-HA-12 East	5Y4/4 olive silty clay	Clay cap over Feature 28 (Drain)	3.10, 4.6, 4.7, 8.6, 8.7, 16.12, 20.16, 21.11, 21.12, 22.6, 22.7, 22.8	II	1721.3	1770
34	BOS-HA-12 East		Feature 21. Post hole	3.9	IV-1		
35	BOS-HA-12 East	10YR2/1 black silty clay	Feature 21. Post hole fill	3.6	IV-1	1728.1	1715
36	BOS-HA-12 East	10YR2/1 black silty clay mottled with 15% 10YR4/6 dark yellowish brown silty clay	Feature 21. Post mold fill	3.8	IV-1		

HN[1]	SITE	SOIL DESCRIPTION	COMMENTS	PROVENIENCE	PHASE	MCD[2]	TPQ[3]
37	BOS-HA-12 East	5Y5/3 olive silty clay mottled with 15% 5Y3/2 dark olive gray silty clay	Clay cap in direct contact with drain	4.8, 8.8, 16.11, 20.15	II	1711.25	1690
38	BOS-HA-12 East		Feature 28 drain. Cut stone drain		II		
39	BOS-HA-12	10YR3/3 dark brown silt loam	Feature 28. Drain fill	8.9, 20.18	IX	1734.3	1762
40	BOS-HA-12	7.5YR2/1 black fine sandy loam	Feature 28. Drain fill	8.10, 20.19	IX	1743.4	1762
41	BOS-HA-12	7.5YR3/1 very dark gray silt; coarse gravel	Feature 28. Drain fill	8.11, 20.20	IX	1723.1	1720
42	BOS-HA-12	10YR3/1 very dark gray fine sand; gravel	Feature 28. Drain fill	8.12, 20.21	IX	1715.3	1700
43	BOS-HA-12 East		Feature 26/27. Post Hole Pit itself		IV-3		
44	BOS-HA-12 East	5Y2.5/1 black silty clay	ground surface remnant	36.12, 36.10	I	1713.4	1762
45	BOS-HA-12 East	10YR4/3 brown silty clay mottled with 15% 10YR4/6 dark yellowish brown silty clay	ground surface remnant	36.13	I	1717.5	1670
46	BOS-HA-12 East	10YR3/3 dark brown silty clay mottled with 10% 10YR4/6 dark yellowish brown silty clay	Feature 36. depression or possible ground surface remnant	36.14	I		

HN[1]	SITE	SOIL DESCRIPTION	COMMENTS	PROVENIENCE	PHASE	MCD[2]	TPQ[3]
47	BOS-HA-12 East		Feature 26. Post hole filled with rock in upper part so as to mask identity. related to Harris #109	36.8	IV-3	1743.7	1715
48	BOS-HA-12 West		Feature 32. Privy box, wood sided, west of Feature 15 and north of Feature 20		IV-2		
49	BOS-HA-12 West	10YR3/1 very dark gray clay loam	Feature 32. Fill (1)	10.9	IV-2	1720.7	1700
50	BOS-HA-12 West	5Y5/3 olive clay	Feature 32. Fill (2)	10.11	IV-2	1728.3	1700
51	BOS-HA-12 West	5Y8/1 white clay ash	Feature 32. Fill (3)	10.12	IV-2	1732.5	1690
52	BOS-HA-12 West	5YR2.5/2 very dusky red sandy loam	Feature 32. Fill (4)	10.13	IV-2	1715	1670
53	BOS-HA-12 East	2.5Y3/2 very dark grayish brown fine sandy clay	Feature 15 and 14. Cut stone dry laid wall forming west and south sides of a building	10.6, 10.7, 10.16, 10.17,, 10.19, 10.20, , 14.6, 14.8, 14.10	V	1730.3	1762
54	BOS-HA-12 East	5Y5/2 olive fine silty clay mottled with 15% 5Y2.5/2 black silty clay	Feature 35. Post hole. May be related to Feature 15 matrix	14.13, 14.14	I	1687.5	1650
55	BOS-HA-12	10YR3/3 dark brown sandy loam; gravel; asphalt; modern artifacts		16.2, 20.2, 21.2	VII	1782	1829

HN[1]	SITE	SOIL DESCRIPTION	COMMENTS	PROVENIENCE	PHASE	MCD[2]	TPQ[3]
56	BOS-HA-12	10YR4/4 dark yellowish brown sandy loam mottled with 50% 10YR4/3 brown sandy loam	Back fill from Phase II Deep Test 2	12.1, 16.4, 16.6	IX	1725.4	1820
57	BOS-HA-12 East	10YR3/3 dark brown sandy loam mottled with 25% 5GY4/1 clay loam		16.3, 20.4	VII	1745.6	1779
58	BOS-HA-12 East	10YR3/3 dark brown sandy loam; wood	Feature 1. Wood Floor	16.5, 21.4, 37.5	V	1722.9	1715
59	BOS-HA-12 East	10YR3/2 very dark grayish brown silt mottled with 15% 5Y6/2 light alive gray clay	Matrix beneath floor (Feature 1)	16.7, 16.8, 21.5	IV-1	1725.7	1720
60	BOS-HA-12 East	2.5Y4/1 dark gray clay loam	Fill	16.9	III	1715.9	1720
61	BOS-HA-12 East		Feature 9. Stone and brick footer	20.5	VII		
62	BOS-HA-12 East	10YR3/3 dark brown sandy loam mottled with 15% 5GY4/1 dark greenish gray clay; rock; bricks	Feature 11. Builder's trench to Feature 9	20.6	VII	1716.4	1700
63	BOS-HA-12 East		Pit outline into which pier and fill were set		VII		
64	BOS-HA-12 East	5Y4/3 olive sandy loam; grave; wood	Feature 19. Possible wood floor	20.9, 20.10, 21.7	III	1712.1	1670

HN[1]	SITE	SOIL DESCRIPTION	COMMENTS	PROVENIENCE	PHASE	MCD[2]	TPQ[3]
65	BOS-HA-12 East	5Y4/3 sandy loam	Fill beneath Feature 19 in unit 20	20.11, 20.12	III	1715	1700
66	BOS-HA-12 East	10YR3/1 very dark gray clay loam	Fill matrix beneath floor in unit 21	21.8, 21.9	III	1718	1770
67	BOS-HA-12 East	5Y4/3 olive clay	Mixed strata between fill and clay cap over drain	16.10, 21.10	II	1715	1700
68	BOS-HA-12 East	10YR7/1 light gray sand mortar		37.3, 12.03	VII	1750	1779
69	BOS-HA-12 East	10YR2.5/1 black silty clay mottled with 15% 5Y3/2 dark olive gray sand; brick	Matrix above floor in unit 37.	37.4, 12.4	VI	1732	1779
70	BOS-HA-12		Phase II MU13	22.2, 22.3	IX	1725	1779
71	BOS-HA-12 East		Feature 30. 19th century privy	22.12, 22.13	VIII	1797.3	1829
72	BOS-HA-12 East	10YR2/1 black sandy loam	pocket of matrix in clay next to Feature 28; possible surface remnant	22.9	I		
73	BOS-HA-12 East	10YR2/1 black sand	pocket of matrix in clay next to Feature 28; possible surface remnant	22.10	I	1735.8	1720
74	BOS-HA-12 East		Feature 25. Wood beam	12.2	VII		
75	BOS-HA-12		All 19th century disturbance associated with Feature 2, Feature 3, Feature 4, Feature 5, and Feature 8.		IX		

HN[1]	SITE	SOIL DESCRIPTION	COMMENTS	PROVENIENCE	PHASE	MCD[2]	TPQ[3]
76	BOS-HA-13		Modern asphalt and bedding	23.1, 24.1, 25.1, 28.1, 29.1, 30.1, 32.1, 34.1, 38.1	V		
77	BOS-HA-13		Feature 2 Cut field stone walk, a boundary line		V		
78	BOS-HA-13		Feature 3. Cut stone foundation, rear of a building	32.5	V		
79	BOS-HA-13	10YR4/3 brown coarse sandy loam; building debris	Feature 3. Cellar fill, mechanically removed	32.3, 32.4	V	1875	1820
80	BOS-HA-13		Feature 5. 19th century foundation; no builder's trench	24.5	V		
81	BOS-HA-13		Feature 6. Cut dry laid stone foundation	24.6	V		
82	BOS-HA-13	10YR3/1 very dark grayish brown sandy loam	Matrix below Feature 6 and above Feature 7.	24.8, 24.9	V	1738.7	1795
83	BOS-HA-13	10YR3/1 very dark gray loam, debris	Matrix associated with the construction of the artery bent.	26.3, 38.2, 38.3, 30.4, 38.5	V	1796.1	1840
84	BOS-HA-13	10YR4/3 brown sandy loam; gravel; bricks	Twentieth century destruction debris	23.2, 24.2, 25.2, 27.2, 32.2, 34.2	V	1777.8	1829
85	BOS-HA-13	10YR4/3 brown silt loam	Matrix into which Feature 2 was set	27.3, 27.4, 27.5	V		

HN[1]	SITE	SOIL DESCRIPTION	COMMENTS	PROVENIENCE	PHASE	MCD[2]	TPQ[3]
86	BOS-HA-13		Matrix that excavation was stopped in unit 27. The superstructure of Feature 4 was set into this matrix	25.3, 27.6	subsoil		
87	BOS-HA-13	10YR3/1 very dark grayish brown sandy loam	Possible BU fill or fill over Feature 7	24.3, 24.4, 24.7	V	1729.2	1795
88	BOS-HA-13		Feature 7. Builder's trench itself		II-2		
89	BOS-HA-13		Feature 7. Wood boards of the trough		II-2		
90	BOS-HA-13	2.5Y3/3 dark olive brown sandy loam	Feature 7. Matrix excavated out of the trough	24.10	II-3		
91	BOS-HA-13	5Y4/2 olive gray clay	Matrix into which Feature 7 was placed.	24.11, 140.10	II-2		
92	BOS-HA-13		Feature 1. Wood superstructure of privy, no builder's trench noticed	26.20, 26.15	IV		
93	BOS-HA-13	10YR3/2 dark gray sandy loam	Feature 1. Privy fill	26.1, 26.2, 26.4, 26.5, 26.6, 26.7, 26.8, 38.4, 38.5, 38.6,, 38.7, 38.8, 38.9	IV	1780.2	1795
94	BOS-HA-13		Builder's trench	Feature 4	I-1	1739.3	1830
95	BOS-HA-13		Brick privy wall (west)	Feature 4	I-1		
96	BOS-HA-13		Feature 4. Wood posts and ground sills associated with the feature superstructure.		I		

HN[1]	SITE	SOIL DESCRIPTION	COMMENTS	PROVENIENCE	PHASE	MCD[2]	TPQ[3]
97	BOS-HA-13	10YR3/1 very dark gray silty clay	Feature 4. Clay cap on the top of the brick wall	26.10, 26.14, 26.15, 26.20, 26.21, 28.5, 28.18, 28.1, 29.9, 29.11, 27.7, 38.10, 27.8, 38.11	III		
98	BOS-HA-13	5GY4/1 dark greenish gray clay	Feature 4. Top fill over privy	26.9, 26.11, 26.12, 26.13 28.2, 28.3, 28.4, 28.6, 28.7, 28.8, 28.9, 28.10, 28.11, 28.12,	III	1746.7	1840
99	BOS-HA-13	5Y4/2 olive gray sandy loam	Feature 4 Fill associated with the barrel	26.16, 26.17, 26.18, 26.19 28.13, 28.14, 28.15	II-2	1694.6	1700
100	BOS-HA-13	10YR3/1 very dark gray silt loam	Feature 4. Privy Matrix	28.16, 28.17, 141.1, 138.1, 139.1, 140.1, 141.2, 138.2, 139.2, 140.2,	I-10	1701.8	1670
101	BOS-HA-13	10YR3/1 very dark gray silt loam		29.2, 30.2, 34.3	V	1784.7	1820
102	BOS-HA-13	10YR2/1 black silt loam		29.3	V	1727.6	1779
103	BOS-HA-13	10YR3/2 very dark grayish brown silty clay	Matrix on which excavation was ended in unit 30	30.6	V	1785.3	1795
104	BOS-HA-13	10YR3/2 very dark grayish brown loam mottled with 25% 5Y5/2 olive gray clay; gravel; destruction debris	Twenth century destruction debris.	30.3	V		
105	BOS-HA-13	10YR3/2 very dark grayish brown loamy sand mottled with 25% 5Y5/2 olive gray clay	Fill	29.4, 29.5, 29.6 30.5	V	1797.4	1842

HN[1]	SITE	SOIL DESCRIPTION	COMMENTS	PROVENIENCE	PHASE	MCD[2]	TPQ[3]
106	BOS-HA-13	5Y5/2 olive gray clay mottled with 15% 10YR3/2 very dark grayish brown loam	Matrix on which unit excavation was stopped. Same level as top of Feature 4 brick.	29.10	IV		
107	BOS-HA-13		Feature 8. Wood board remnant of ca. 1800 privy		IV		
108	BOS-HA-13	10YR2/2 dark brown loam; organic matter; privy fill	Feature 8. Feature fill remnant	29.7, 29.8	IV	1802	1820
109	BOS-HA-12 East	5Y3/2 dark olive gray clay	Feature 27. Post hole filled with rock in upper part so as to mask identity. Related to Harris #47	36.11	IV-3	1705	1630
110	BOS-HA-13	10YR3/1 very dark gray loam	Deposit over the top of feature 1	26.3	V		
111	BOS-HA-13	5Y3/2 dark olive gray clay	Feature 10 fill	25.3	IV-1	1707.5	1650
112	BOS-HA-13		Feature 10 cedar post		IV-1		
113	BOS-HA-13		Feature 10 hole		IV-1		
114	BOS-HA-13	10YR3/2 very dark grayish brown silty clay	Feature 10 fill	25.4	IV-1	1722	1720
115	BOS-HA-13	10YR3/2 very dark grayish brown loam	Feature 14 post mold fill	27.7	IV-1	1714.4	1670
116	BOS-HA-13	5Y3/2 dark olive gray clay	Feature 13 post hole fill	27.8	IV-1	1708	1640
117	BOS-HA-13		Feature 14 hole		IV-1		

HN[1]	SITE	SOIL DESCRIPTION	COMMENTS	PROVENIENCE	PHASE	MCD[2]	TPQ[3]
118	BOS-HA-13		Feature 14 wood post fragments		IV-1		
119	BOS-HA-13		Feature 14 hole		IV-1		
120	BOS-HA-13	5Y3/2 dark olive gray clay	Feature 13 post hole fill	25.5	IV-1	1717.2	1720
121	BOS-HA-13		Feature 13 cedar post		IV-1		
122	BOS-HA-13	5Y2.5/1 black silt clay	Tub fill; PSBD 1698	Feature 4	II-3	1712.5	1670
123	BOS-HA-13		Wood tub	Feature 4	II-2		
124	BOS-HA-13		Feature 11 possible wooden ground sill	Feature 4	I-1		
125	BOS-HA-13	10YR3/1 very dark gray loam	Possible percolation fill; PSBD 1724	Feature 4	II-1	1697.13	1670
126	BOS-HA-13		Feature 12 hole		I		
127	BOS-HA-13	5Y3/2 dark olive gray clay	Feature 12 post hole fill	25.6	IV-1	1705.4	1640
128	BOS-HA-13		Wood floor plank	Feature 4	I-9		
129	BOS-HA-13		Wood floor plank	Feature 4	I-9		
130	BOS-HA-13		Wood floor plank	Feature 4	I-9		
131	BOS-HA-13		Wood floor plank	Feature 4	I-9		
132	BOS-HA-13		Wood floor plank	Feature 4	I-9		
133	BOS-HA-13		Wood floor plank	Feature 4	I-9		
134	BOS-HA-13		Wood floor plank	Feature 4	I-9		

HN[1]	SITE	SOIL DESCRIPTION	COMMENTS	PROVENIENCE	PHASE	MCD[2]	TPQ[3]
135	BOS-HA-13		Wood floor plank	Feature 4	I-9		
136	BOS-HA-13		Wood floor plank	Feature 4	I-9		
137	BOS-HA-13		Horizontal timber	Feature 4	I		
138	BOS-HA-13		Wood post	Feature 4	I		
139	BOS-HA-13		Wood post	Feature 4	I		
140	BOS-HA-13		Vertical wood plank west wall	Feature 4	I		
141	BOS-HA-13		Vertical wood plank south wall	Feature 4	I		
142	BOS-HA-13		Wood beam floor joist	Feature 4	I		
143	BOS-HA-13		Wood beam floor joist	Feature 4	I		
144	BOS-HA-13		Wood beam floor joist	Feature 4	I		
145	BOS-HA-13		Wood beam floor joist	Feature 4	I		
146	BOS-HA-13	5Y4/2 dark reddish gray compact loam mottled with 15% 10YR3/3 dark brown clay loam and 15% N2.5/0 black clay loam; cobbles and water worn pebbles	PSBD 1672	Feature 4	I-8	1703.4	1670
147	BOS-HA-13		Wood debris	Feature 4	I-8		
148	BOS-HA-13	N2.5/0 black clay loam, cobbles, sand, water worn rock	PSBD 1658	Feature 4	I-5	1695.35	1670

HN[1]	SITE	SOIL DESCRIPTION	COMMENTS	PROVENIENCE	PHASE	MCD[2]	TPQ[3]
149	BOS-HA-13	5Y3/2 dark olive gray compact loam	PSBD 1664	Feature 4	I-7	1699.17	1650
150	BOS-HA-13		Wood brace (pine) between HN 140 and HN 141	Feature 4	I-7		
151	BOS-HA-13	5B4/1 dark bluish gray fine silty sand		Feature 4	I-3	1705	1630
152		5Y3/2 dark olive gray silty clay		Feature 4	I-3		
153	BOS-HA-13	5GY4/1 dark greenish gray silty clay		Feature 4	I-3		
154	BOS-HA-13	N2.5/0 black clay loam	PSBD 1664	Feature 4	I-2	1698.97	1650
155	BOS-HA-13		Brick privy wall (north)	Feature 4	I-1		
156	BOS-HA-13		Brick privy wall (east)	Feature 4	I-1		
157	BOS-HA-13		Brick privy wall (south)	Feature 4	I-1		
158	BOS-HA-13		Wood debris	Feature 4	I-10		
159	BOS-HA-13		Wood debris	Feature 4	I-10		
160	BOS-HA-13		Feature 10 repair hole	Feature 4	IV-1		
161	BOS-HA-13	5Y3/2 dark olive gray clay loam	Feature 10 repair hole fill	25.6	IV-1		
162	BOS-HA-13		Stone wall		I-1		
163	BOS-HA-13		Feature 12 builder's trench	28.7, 28.10	V		

HN[1]	SITE	SOIL DESCRIPTION	COMMENTS	PROVENIENCE	PHASE	MCD[2]	TPQ[3]
164	BOS-HA-13		Removal event	Feature 4	I-6		
165	BOS-HA-13		Removal event (cleaning)	Feature 4	I-4		
200	BOS-HA-12 East		Disturbed; artifacts from unit 35; not used in analysis	35.1, 35.2, 35.3, 35.4, 35.5, 35.6, 35.7		1730.7	1795

1 Harris Number
2 Mean ceramic date
3 *Terminus post quem*
4 Pipe stem bore date
5 Paddy's Alley eat and west were combined into a single property in the late eighteenth century.

APPENDIX C

FAUNA ANALYSIS

Table of Contents

Table of Contents (cont'd)

Page

List of Tables

List of Figures

Acknowledgments

We want to thank Timelines and John Milner Associates for giving us the opportunity to analyze faunal remains from the Paddy's Alley and Cross Street Back Lot sites. Many from both these organizations, including Mike Roberts, Charles Cheek, Elena Decima, Lauren Cook and Jo Balicki, have given unselfishly of their time as we have worked through the planning, identification, and analytic phases of this project. We also want to thank the Museum of Natural History of the Smithsonian Institution, especially staff members Phil Angle, Linda Gordon, and George Zug, who generously allowed us the use of their comparative collections to identify remains that could not be identified in Colonial Williamsburg's faunal laboratory. Lastly, we want to thank our colleagues who helped with the faunal analysis, including Elise Manning, Jeremiah Dandoy, Stephen Atkins, Susan Trevarthen Andrews, Sondra Jarvis, Joseph Doyle, and Susannah Dean, along with a number of students who helped with the mind-numbing task of numbering bones.

Introduction

In early 1993, faunal remains excavated from the Paddy's Alley and Cross Street Back Lot sites (BOS-HA-12 and BOS-HA-13) were submitted to Colonial Williamsburg's Zooarchaeological Laboratory for analysis. Between January and November 1993 zooarchaeologists from the Zooarchaeological Lab, working under the overall direction of Joanne Bowen, completed the identification and analysis of 12,868 bone fragments.

Later in 1993, faunal remains from the Mill Pond site (BOS-HA-14) were submitted. In spring 1994 some 3933 bones from this site were identified and analyzed. These bones have been combined with the Paddy's Alley/Cross Street remains for the purposes of this report.

In early 1995, an additional 3800 bones from Feature 4 in the Cross Street Back Lot, an late seventeenth-/early eighteenth-century privy, were submitted. These bones, important material evidence from this very important feature, were analyzed in spring 1995. In some parts of this report they have been combined with the other Cross Street Back Lot bones for purposes of analysis, although since they were identified separately, and minimum number of individuals were determined separately for these later assemblages, they will also be discussed separately as appropriate.

The bones from the three sites were quite well preserved, and it was immediately apparent that the collection included, along with the ever-present bones from larger domestic mammals, a variety of fish, bird, and amphibian bones that suggest that recovery bias is fairly minimal. According to the Paddy's Alley/Cross Street draft site evaluation report (Cook and Balicki 1994), hand-excavated soil from the sites was screened through 0.6 cm (one-eighth inch) mesh.

Only a few bones exhibited signs of weathering, caused by being exposed for some length of time to the sun, rain, or changing climatic conditions. The presence of ash, charcoal, and oyster shell in the various features probably contributed to the outstanding preservation of faunal remains. There is little evidence of the presence of modern rodents, as few of the bones appear to have been chewed, but there was a certain amount of damage from carnivores.

Based on the excellent preservation, lack of major recovery bias, and large sample sizes of some of the assemblages, we believe that the faunal data have great interpretive potential. The following report will include a discussion of methods used during the identification process, descriptions of methods used to quantify relative dietary patterns, age mortality, and element distributions, followed by a discussion on the species found in the various assemblages, and a discussion of dietary and marketing patterns as evidence in the data derived from the analysis of the 44 different assemblages and sub-assemblages recovered from the Paddy's Alley, Cross Street Back Lot, and Mill Pond sites.

Identification and Analytical Procedures

Identification Procedures

The following section describes some of the techniques employed by Colonial Williamsburg's Zooarchaeology Laboratory. These standard methods, similar to those used by many other modern-day zooarchaeologists, were modified somewhat to accommodate particular conditions for the Paddy's Alley/Cross Street/Mill Pond assemblages (for example, the use of "lot" numbers in place of context numbers in the computer program). These divergences will be noted where appropriate.

All bone fragments submitted for analysis were first sorted into "identifiable" and "unidentifiable" categories. The unidentifiable bone, fragments which could not be taken to at least the taxonomic level of Order, were sorted by class (mammal, fish, bird, etc.), and element type (long bone, rib, tooth, etc.). Each grouping (for example, large mammal long bone from lot 4144) was then given a so-called "unique bone (UB) number," which is used for computer-aided tracking. The number of bone fragments in the group was tabulated, and the bone was weighed on a digital scale for the purpose of biomass calculation (described later). This data was entered into a custom-designed microcomputer program used by Colonial Williamsburg's Department of Archaeological Research.

Any burned bone fragments in the unidentified category were recorded separately, that is, burned large mammal long bones from lot 4144 were given a separate unique bone number, and entered separately, from unburned large mammal long bones from the same lot. Otherwise, the bones were generally too fragmentary to determine any other modifications or to be used for aging or sexing. Once recorded, the unidentifiable bone was returned to a plastic bag which was labelled with the site, lot number, and inclusive UB numbers.

Working with a comparative collection housed and maintained in Colonial Williamsburg's Zooarchaeology Lab, the remaining "identifiable" bone fragments were carefully studied. Each bone fragment was first given a UB number, which was written on the bone itself (if possible, otherwise on a plastic bag into which the bone was placed). The lot number was also recorded on the bone along with the site, so for example a single bone might be labelled "123-BOS-HA-12-4144," representing unique bone 123 from Paddy's Alley (BOS-HA-12) lot number 4144. The number is written in the most inconspicuous place possible on the bone, and is written atop a layer of nail polish so that it can be removed if necessary for photography, etc.

Labelled bones were then laid out for identification. By working with morphological characteristics, each bone was identified to the lowest possible taxonomic level. If the identification was somewhat questionable, due to the size of the fragment or the lack of diagnostic features, a "cf." designation was added. Thus a bone identified as "cf. *Bos taurus*" represents an element, most likely a long bone shaft or cranial element, that is probably but not certainly from a domestic cow. In keeping with common practice, these "cf." specimens were included with the more certain identifications in calculating element distributions, kill-off patterns, etc.

The taxon, bone element, side, portion of the element, tooth wear, state of epiphyseal fusion, general condition, taphonomic modifications, evidence of burning, and butcher marks were all recorded and entered into the computer program. Butchering marks were also recorded on specially-designed diagrams.

Once identification was completed analysis began. Basing our work on the occupation phases defined by Balicki and his colleagues, we grouped the bones into the various assemblages. Because we had so many phases and sub-phases to deal with, this analysis was accomplished using the concepts of "master context" and "phase/period." For example, each of Cook and Balicki's "phases" was assigned a "period" designation, as shown in Table 1. Similarly, each sub-phase or (at Paddy's Alley) west/east lot designation was assigned a separate master context. In this way, we were able to use the computer program to generate the standard zooarchaeological measures of relative importance for each assemblage and sub-assemblage, including NISP, MNI, Minimum Weights, and Biomass.

The lots assigned to each assemblage and sub-assemblage, along with associated Harris numbers, are given in Appendix A.

Quantification Methods

Zooarchaeologists use several methods to estimate the relative dietary importance of various species. Whether a zooarchaeologist bases his/her faunal analysis on NISP, MNI's, Minimum Weights, or Biomass estimates, the goal is to measure relative dietary importance. Statistically the measure is *ordinal*—in everyday terms it means these

Table 1.
Assemblages Analyzed

Phase	Description	No. Bones
PA Phase I	Ca. 1700 Initial occupation	398
PA Phase I-West	West Lot	248
PA Phase I-East	East Lot	150
PA Phase II	Ca. 1710 Drain installation	752
PA Phase III	Ca. 1700-1720 Occupation	2574
PA Phase III-West	West Lot	582
PA Phase III-East	East Lot	1992
PA Phase IV	Ca. 1720-1730s Occupation	5605
PA Phase IV-West	West Lot	2791
PA Phase IV-East	East Lot	2814
PA Phase IV-1	Ca. 1720-1725 Occupation (Privy)	1049
PA Phase IV-1-West	West Lot	827
PA Phase IV-1-East	East Lot	222
PA Phase IV-2	Ca. 1725-1730 Occupation (Privy)	64
PA Phase IV-3	Ca. 1730s Occupation	4494
PA Phase IV-3-West	West Lot	1902
PA Phase IV-3-East	East Lot	2592
PA Phase V	Ca. 1730 Construction of structure	186
PA Phase VI	Ca. 1730 Use of structure	46
PA Phase VII	Ca. 1760-1790 Occupation	691
PA Phase VII-West	West Lot	13
PA Phase VII-East	East Lot	678
PA Phase IX	19th- through 20th-c. occupation	12
CSB Phase I	Ca. 1700 Initial occupation	298
CSB Phase I	Ca. 1700 Earliest use of Feature 4	1618
CSB Phase I-2	Earliest fecal deposition	434
CSB Phase I-3	Fill cap	38
CSB Phase I-5	Fecal deposition	559
CSB Phase I-7	Fill around cross-piece	47
CSB Phase I-8	Fecal deposition with mixed fill and wood debris	194
CSB Phase I-10	Fecal deposition	346
CSB Phase II	Ca. 1716 Early 18th c. use of Feature 4	354
CSB Phase II	Ca. 1716 Use of Feature 4	2195
CSB Phase II-1	Possible percolation fill	1248
CSB Phase II-2	Clay fill around barrel and trough	587
CSB Phase II-3	Deposition matrix within tub	360
CSB Phase III	Ca. 1720s-1740s Privy closure and abandonment	1101
CSB Phase IV	Ca. 1780-1810 Late 18th- through early 19th c. occupation	103
CSB Phase V	Ca. 1750-1800 Occupation	513
MP Phase I	Late 17th to early 18th c. Domestic	776
MP Phase III	Late 18th c. Bulkhead fill	145
MP Phase IIIa	Late 18th c. Dock	1448

Note: PA=Paddy's Alley; CSB=Cross Street Back Lot; MP=Mill Pond.

Table 1 (cont'd).
Assemblages Analyzed

Phase	Description	No. Bones
MP Phase IV	Early 19th c. Landfill	396
MP Phase V	Late 18th c. Domestic	1168

estimates are not absolute measures of abundance. Rather the information is *relative*—each measure provides information on the abundance of each taxon only in relation to others identified in the sample, so that we can say that cattle were more important than pigs, but not that cattle provided *x* pounds of meat and pigs *y* pounds in absolute terms.

As with any statistical method, each abundance estimate has its own inherent strengths and biases. Each provides a different measure of relative importance, however, and by computing all four estimates of relative importance, we can take advantage of the strengths of each, as Charles Cleland so ably demonstrated in his study of Ft. Michilimackinac (1970). Unfortunately, most zooarchaeologists have discarded one or more methods in their work. We think that, by computing all four estimates, this comprehensive approach allows the comparison of our data with the work of others, however limited these comparisons might be.

Recovery techniques always have a great effect on zooarchaeological analysis. For example, if soil is not screened during excavation, studies have shown that most of the small mammal, birds, fish, and amphibian remains will be lost. If soil is sieved through one-quarter inch mesh screens, some of the larger elements from these smaller animals will be recovered. By using other methods, such as flotation and screening soil through window screen or one-eighth inch hardware mesh, it becomes possible to recover bones from most of the smaller animals as well (Shaffer 1992).

The most basic method of quantification of the remains is simply to count the numbers of identified fragments. Known as the NISP (Number of Identified Specimens), this estimate measures the relative abundance of identified bone fragments of different taxa. Although the NISP simply counts the identified fragments, it does sort out the taxa contributing the large amounts of meat to the diet from those contributing minimal amounts of meat. Using this method zooarchaeologists have shown that humans from many cultures and differing subsistence regimes have relied on only a few animals to provide the bulk of their meat diet. A wide and diverse range of animals provides variety and a way to live through seasons when the preferred animals are relatively scarce (Grayson 1984).

But there are enough weaknesses in this estimate of relative abundance that it should only be used in conjunction with other measurements. Some classes of vertebrates, such as fish, have many more bones than either mammals or birds. Since this technique counts only identified bones, not the living animals from which they came, the relative abundance of fish could thus, in principle, be exaggerated. Another problem is that it lumps together highly fragmented bones from an undetermined number of living animals (the normal type of deposit) with the remains of complete skeletons (as in animal burials, or carcasses of commensal animals that found their way into a trash deposit).

The method also assumes that all specimens are equally affected by preservational factors, chance, and deliberate breakage. Bones break during many phases of butchering, food preparation, or disposal, and the effect on bones is not consistent with all taxa (or even among all bones from a single skeleton). Butchering, for example, does not affect large and small animals equally. Small animals such as chickens are often left more or less intact, while larger animals such as cattle, pigs, and sheep are cut into multiple pieces during the initial butchering and subsequent preparation for consumption.

Additionally, different elements within a skeleton have differential preservation characteristics—compact bone such as the bones in the joints of the foot (the carpals and tarsals) have a better chance of preservation than cancellous bone, the open-matrix form found underlying compact bone in the joints of long bones. Once long bones are broken, the soft cancellous bone is exposed and degradation can occur rapidly, particularly if the bone is left exposed to changing weather conditions, human trampling, dogs, or rodents. The result, in practice, is that NISP over-represents the larger animals with relatively hard bones that are broken into many pieces during butchering or food preparation. But although the NISP may not provide a very helpful measure of the relative importance of animals, the method can help to assess the extent of breakage in the assemblage.

From a statistical point of view the most important problem with the NISP is that of interdependence (Grayson 1984). The NISP assumes the bones being counted are representative of the sampled population, and that each item is independent of every other item. But there is no way to demonstrate which bone fragments came from different individuals across an entire faunal sample.

From an interpretive standpoint, the most important problem is that the NISP represents the number of fragments identified to taxon—and only that. Because in its pure form it considers only the number of bones and not the relative size of the various living animals from which they came, it provides neither the information on the relative importance of individuals or their relative contribution to the diet. Many zooarchaeologists have come to the conclusion that this technique cannot provide an accurate assessment of the relative dietary importance of various species (Grayson 1984; Cruz-Uribe 1988; Klein and Cruz-Uribe 1984).

A common alternative to the NISP method is the "Minimum Numbers of Individuals" (MNI) technique. The MNI is the smallest number of live animals that can be accounted for in the recovered bone fragments (White 1953). For each taxon, the MNI is calculated by determining the smallest number of individuals represented for each element, taking into consideration differences in age, sex, and size. MNI's are determined for each element, then a figure for the entire skeleton is determined. Most often, the minimum number of individuals is determined simply by counting the most commonly occurring unique element (e.g. the left humerus). But gross differences in size, age, and sex are also considered. For example, if an individual from a distinctively different age group (for example, a veal calf) is not found in the humerus, but is present in another element, the total MNI will reflect the number of adult individuals determined from the humerus, plus the single veal calf found in a different element.

The MNI estimates bypasses problems present in the NISP method in that it naturally corrects for the differential number of bones in fish skeletons, as well as the presence of complete skeletons. Since it views the data in terms of live animals, the method also produces data more comparable to information on livestock found in historical sources (Bowen 1975; Breitburg 1991). Probate inventories, tax records, and farm records tend to list numbers of individuals, not numbers of pounds of meat. Such comparability has been mostly overlooked in historical archaeology, despite the obvious potential. Some exceptions are the work of Bowen (1975b) and Breitburg (1991).

However, accurate estimations of dietary importance based on the Minimum Number of Individuals require a large number of bones, since infrequently-occurring animals are over-represented in small assemblages (Grayson 1984). In fact, Wing, Reitz, and Grayson claim that the total Minimum Number of Individuals in an assemblage must be at least 200 before MNI's become an accurate assessment of relative importance, albeit this ideal situation is often not achievable in practice (Reitz and Scarry 1985; Wing and Brown 1979; Grayson 1984).

There are serious statistical flaws with the MNI technique, however, since the values are dependent on the thoroughness of the analyst, the units of aggregation, and sample size. Particularly for small samples, it tends to overinflate the importance of less common species and thus provides a skewed picture of their true dietary importance. Lastly, even with an adequate sample size, it does not provide a true relative dietary estimate. Large and small taxa are given equal weight, with the result that, for example, one pig and one cow are seen as equally important in dietary terms. They provide an estimate of the relative importance of individuals, not meat, and they therefore do not reflect the dietary importance of different taxa.

A method estimating the amount of meat represented by the MNI's, often called the Meat Weight method, counters this misrepresentation by multiplying the number of individuals by the average amount of useable meat for a given taxon. When average weights for colonial livestock are used, a rough estimate of the relative dietary importance in terms of the actual proportion of meat produced becomes possible. Since it relies on the MNI as one of its multipliers, however, this data set suffers from the same problems inherent in the MNI method. Further, it assumes that estimated average weights are correct for the colonial period (not always certain or even likely) and that variation in size within an assemblage is not a significant factor.

In computing MNI's in our laboratory we make painstaking efforts to produce the most reliable estimates possible. Many zooarchaeologists compute this estimate using their computer programs rather than physically re-examining the bones. We work on the assumption that there are far too many variables to consider which are glossed over or left out of these programs. Therefore, all bones identified to species are again laid out by assemblage or sub-assemblage for visual comparison. The relative size, portion of element, and age of each bone are each taken into careful consideration. The results are worth the additional effort, and can be seen in the close correlation between Meat Weight and Biomass estimates.

A final technique which is rapidly becoming a standard measure in zooarchaeology is known as the "biomass" or "skeletal mass allometry" method. Largely developed for historical archaeology by Elizabeth Reitz of the University of Georgia, this method relies on the weight of the bone itself to determine relative meat weights. It is based on the basic principle of allometry—that any two dimensions of an animal grow in a relatively-predictable exponential curve, from which an equation relating the two can provide meat estimates (Reitz and Cordier 1983; Reitz and Scarry 1985). This estimate, therefore, provides a balance to the NISP, MNI, and MNI-based Meat Weights. It successfully counters the problem of interdependence, since it accounts for the presence/absence of partial and complete skeletons. It does not depend strongly on thoroughness or assemblage composition, and fragmentation is not a problem. It does, however, require that each bone (or set of bones) be weighed individually, and the allometric factors are not necessarily as precise as might be wished. Additionally, it was introduced to historical archaeology only relatively recently, and thus is not suitable for comparative purposes with assemblages analyzed in previous years.

Dietary estimates, provided later in this report, are based primarily on the biomass technique, since this method appears to be less directly influenced by levels of aggregation and sample size (although these factors certainly should not be taken lightly even using this technique). In the larger assemblages, usable meat weight figures are also discussed; it should be noted that the meat weight figures, given the generally small MNI values in each assemblage, give a slightly different picture, usually magnifying the importance of pig in relation to sheep/goat. This quantification difference between the two methods, both based on fundamentally different data sources (bone weight vs. MNI value), should be investigated in the future before large-scale comparative work on these sorts of sites is undertaken.

TAPHONOMY, BUTCHERING, AND CUTS OF MEAT

The determination of what cuts of meat are represented in a faunal assemblage begins with the careful analysis of taphonomic modifications. Identifying alterations resulting from natural processes such as temperature variation that can dry out, split, or otherwise degrade bone, carnivores and rodents that chew bone, and human feet that can further fragment bone, is the important first step. Identifying modifications resulting from cultural activities such as butchering is equally important, particularly for bone which has been butchered with a cleaver or ax, for modifications resulting from percussion tools look to the unschooled and unwary much like stress fractures resulting from temperature variation (Gifford 1981; Lyman 1987b; Bonnichsen and Sorg 1989; Johnson 1985).

During the identification phase of this project, marks left by carnivore and rodent teeth were fully noted, as well as bones that we refer to as "worn" (meaning the bone had been altered, but the cause could not be identified). The location of the modifications on the bone (i.e., proximal, distal, etc.) was also noted. Butchering marks were recorded similarly. Chop marks (seen as shears, conchoidal and spiral fractures, strike platforms, and various scars left by chopping tools and knives) were recorded according to their location on the bone.

While the identified bones were laid out to determine the Minimum Number of Individuals, a further assessment of butcher marks and other modifications was made. Element by element, we worked through the cow, pig, and sheep/goat remains, recording on element sketches the locations of butcher marks and alterations made by dogs, rodents, and undetermined sources. Later, this data was collated on diagrams of the complete skeleton (Appendix D).

This information provides the building blocks for assessing cuts of meat, their physical appearance, and how they changed over time. By systematically analyzing this data, taking into careful consideration both taphonomic problems and the types of butcher marks and their locations, it should make be possible to identify cuts of meat and how they changed through time. Ultimately, by analyzing this data in light of documentary evidence showing who raised and slaughtered livestock, who purchased professionally butchered meats, and the overall food system in which these individuals lived, it should be possible to determine when and how the centralization of the slaughter and processing of carcasses occurred, and to identify when and how urban municipal governments regulated the availability of different cuts of meat. With this information in hand, it should then be possible to identify household variability in consumption.

The analysis of the cuts of meat represented in the Paddy's Alley and Cross Street assemblages is based on NISP, which is used to estimate the relative importance of specific body parts. Although there are many more bones present in the cranium and feet than in, for instance, forefeet or hindfeet, and NISP therefore present a disproportionate representation of the relative importance of heads and feet to other portions of the body, we have shown them in relation to a normal distribution of elements contained in different body sections, much as Reitz (1988) did in her report for the Calvert House faunal remains.

The raw data for the element distributions for the various assemblages are included in Appendix E. In the interpretive section we have shown body part distributions in terms of "Heads," "Bodies," and "Feet."

ANIMAL HUSBANDRY AND SPECIALIZED ECONOMIES

Another form of faunal analysis—the determination of the age at which an animal was slaughtered—is important because it provides data critical to the study of animal husbandry and agricultural economics. Since the age at which livestock are slaughtered is a direct reflection of the uses to which they are put, different types of agricultural economies and approaches to animal husbandry will produce recognizable patterns in slaughtering ages. In a subsistence level of a mixed husbandry system, for example, domestic animals served multiple purposes (including draft and/or dairy products, wool, and meat). Only when they have outlived their usefulness as live animals will they be slaughtered for their meat. On the other hand, more specialized agricultural economies, in which animals are raised for one specific purpose (i.e., beef cattle or dairy cows), will kill off their livestock as soon as they have reached their optimum weight, or after their productivity has declined (Bundy, Diggins, and Christensen 1982; Blakely and Bade 1985). Age data gathered from faunal assemblages should reflect the type of economy being practiced (Wilson et al. 1982).

Several aging techniques, ranging from relatively subjective criteria such as relative size and characteristics of the bone to more scientific methods such as epiphyseal fusion dating, are used to determine the age at death. General criteria used include the relative size of bone and the bone's degree of grainy softness or hardness. More precise data is obtained by assessing the degree of fusion of the epiphysis of the long bone, tooth eruption, and the degree of tooth wear (Watson 1978; Wilson et al. 1982; Maltby 1982, 1985). Although tooth eruption and wear patterns provide more accurate age information than epiphyseal fusion rates, however, most historic-period assemblages do not contain enough mandibles and maxillae from which kill-off patterns could be reconstructed. Paddy's Alley and Cross Street Back Lot sites are no exception. Tooth eruption and wear were recorded, but no systematic analysis was done.

The technique of epiphyseal fusion aging is based on general developmental morphology. There are three growth areas in a typical mammalian long bone: the shaft or diaphysis and epiphyses on either end. The diaphysis is separated from each epiphysis by cartilage, which is progressively ossified as the epiphyses "fuse" to the shaft. The age at which these epiphyses fuse varies by element and articulation, but is generally consistent (within a few months) for each element in a given species. By noting which epiphyses are fused and which are not in animals of known age, the sequence of bone fusion can be determined.

It should be understood, of course, that these are statistical tendencies rather than absolute dates (Watson 1978). In females and castrated males, for example, the fusion process appears to be delayed. It also varies with different breeds of the same species and with diet and environmental factors. For that reason a number of epiphyseal articulations are used, and the results are averaged out over relatively wide date ranges (generally 10-18 months).

When fusion statistics are determined for a large number of bones for a given assemblage, estimates of approximate slaughter ages can be reconstructed. Following Raymond Chaplin, as has outlined in *The Study of Animal Bones from Archaeological Sites*, the fused or unfused condition of the epiphysis of the limb bones were recorded whenever possible for the cow, sheep/goat, and pig (Chaplin 1971).

In reconstructing these kill-off patterns, the effects of taphonomic processes on bone need to be considered (Maltby 1979, 1985). Because soft immature bone will not survive as well as more mature bone, it is generally thought that the younger animals will be under-represented in the archaeological kill-off patterns. These kill-off patterns, therefore, may under-represent the young and the data should be taken as only approximate proportions of individuals killed within an age group.

Taxa Identified

A wide variety of fish, birds, and mammals were found in the Paddy's Alley/Cross Street Back Lot/Mill Pond assemblages (Table 2). Before progressing to a detailed discussion of relative dietary importance, meat cuts, butchering, and husbandry, however, it is necessary to briefly describe the habitat, availability, and economic importance of each animal. More in-depth information is available in the field guides, traveller's accounts, and wild game and livestock management texts listed in the bibliography.

CRUSTACEANS

Several fragments of lobster shell were found in the Cross Street Back Lot Feature 4 material submitted in 1995. The American lobster (*Homarus americanus*) is found only off the eastern coast of North America between Labrador and North Carolina. With an average length of about 10 inches and an average weight of 2 to 5 pounds, they are usually found in bottom sediments between 10 and 100 feet below the water surface (Microsoft Encarta 1993).

Table 2.
Taxa Identified from the Paddy's Alley, Cross Street Back Lot, and Mill Pond Sites

	Paddy's Alley Phases								Cross St. Back Lot Phases*					Mill Pond Phases				
	I	II	III	IV	V	VI	VII	IX	I	II	III	IV	V	I	III	IIIa	IV	V
Homarus americanus (Northern Lobster)									x	x								
Order Lamniformes (Typical Shark)			x						x									
Class Osteichthyes (Bony Fish)	x	x	x	x	x		x		x	x	x	x	x	x		x		x
Acipenser spp. (Sturgeon)				x														
Family Clupeidae (Herring)									x									
Alosa pseudoharengus (Alewife)									x									
Clupea harengus (Atlantic Herring)									x									
Family Gadidae (Codfish)	x	x	x	x	x		x		x	x	x		x					
Gadus morhua (Atlantic Cod)			x	x					x	x	x		x	x		x	x	
Melanogrammus aeglefinus (Haddock)			x	x					x	x	x		x			x		x
Morone saxatilis (Striped Bass)				x					x	x								
Class Amphibia (Amphibian)									x									
Chelydra serpentina (Snapping Turtle)												x						
Class Aves (Bird)	x	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x
Class Aves/Mammalia III (Bird/Small Mammal)			x	x			x		x	x						x		
Gavia stellata (Red-Throated Loon)		x																
Goose spp.		x	x	x			x		x		x		x			x	x	x
Anser anser (Domestic Goose)	x	x	x	x	x		x			x		x	x			x	x	
Branta canadensis (Canada Goose)	x	x	x															
Branta bernicula (Brant)														x				
Duck spp. (Duck)		x			x		x		x	x	x		x		x	x	x	x
Anas spp. (Dabbling Duck)									x									
Anas platyrhynchos (Domestic Duck or Mallard)			x	x			x		x	x	x	x	x					
Aythya spp. (Pochard)				x														
Bucephala albeola (Bufflehead)	x		x	x														
Mergus merganser (Common Merganser)							x											
Charadius vociferus (Killdeer)		x					x											

Table 2.
Taxa Identified from the Paddy's Alley, Cross Street Back Lot, and Mill Pond Sites

	Paddy's Alley Phases								Cross St. Back Lot Phases*					Mill Pond Phases				
	I	II	III	IV	V	VI	VII	IX	I	II	III	IV	V	I	III	IIIa	IV	V
Catoptorphorus semipalmatus (Willet)		x																
Family Phasianidae (Grouse, Partridge, or Pheasant)		x	x	x			x		x	x					x	x	x	x
Meleagris gallopavo (Turkey)	x	x	x	x					x	x	x	x	x	x	x	x	x	x
Gallus gallus (Chicken)	x	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x
Tympanuchus cupido (Heath Hen)				x														
Family Columbidae (Pigeon or Dove)				x										x		x		x
Ectopistes migratorius (Passenger Pigeon)	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x
Class Mammalia (Mammal)	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x		x
Class Mammalia I (Large Mammal)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Class Mammalia II (Medium Mammal)	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x
Class Mammalia III (Small Mammal)	x	x	x	x	x		x	x	x	x			x	x		x		
Sciurus carolinensis (Eastern Gray Squirrel)			x															
Rattus spp. (Old World Rat)				x					x	x			x					x
Rattus norvegicus (Norway Rat)			x						x			x	x				x	
Canis spp. (Dog or Wolf)		x		x														
Canis familiaris (Domestic Dog)														x				
Felis domesticus (Domestic Cat)	x	x	x	x			x		x	x	x						x	
Order Artiodactyla I (Sheep, Goat, Deer, or Pig)	x	x	x	x		x	x		x		x	x	x			x		x
Order Artiodactyla II (Sheep, Goat, or Deer)	x		x	x		x	x		x	x	x				x	x		x
Sus scrofa (Domestic Pig)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Odocoileus virginianus (White-Tailed Deer)			x				x		x				x			x		
Bos taurus (Domestic Cow)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Ovis aries (Domestic Sheep)	x	x	x	x		x	x		x	x	x		x	x		x	x	x
Capra hircus (Domestic Goat)		x	x	x									x					
Ovis aries/Capra hircus (Domestic Sheep or Goat)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Table 2.
Taxa Identified from the Paddy's Alley, Cross Street Back Lot, and Mill Pond Sites

	Paddy's Alley Phases								Cross St. Back Lot Phases*					Mill Pond Phases				
	I	II	III	IV	V	VI	VII	IX	I	II	III	IV	V	I	III	IIIa	IV	V
Bos taurus/Equus sp. (Domestic Cow, Horse, or Ass)	x	x	x	x	x	x	x		x			x	x					x
Subphylum Vertebrata (Other Vertebrate)	x	x	x	x	x		x		x	x	x	x	x					

* Phases I and II include material submitted in 1995 from Feature 4.

FISH

Despite the importance of the fishing industry in New England, fish were not abundant in the Paddy's Alley/Cross Street Back Lot/Mill Pond assemblages. At least six taxa were represented, however—five from the Class Osteichthyes, or bony fishes, and one from the Class Chondrichthyes, or cartilaginous fishes such as sharks and rays.

The latter was represented by two vertebrae from the "typical" sharks (Order Lamniformes), which include sand tigers, requiem sharks, and hammerheads, among others. The commonest species in coastal waters is probably the sand tiger (*Odontaspis taurus*), a rather large species which may reach ten feet in length (Robins, Ray, and Douglass 1986).

The bony fishes are represented by several species. The sturgeon (*Acipenser* sp.) is a bottom-dwelling anadromous fish that lives in diverse habitats. The larger species, the Atlantic sturgeon (*Acipenser oxyrhynchus*), is found in shallow waters along the continental shelf, sometimes entering larger rivers to spawn. The other main species, the shortnose sturgeon (*Acipenser brevirostrum*), is more commonly found in river mouths, tidal rivers, estuaries, and bays. Living up to 50 years, they can become enormously large, averaging 6-8 feet in length. They are important commercially; their roe is made into high-quality caviar, their flesh is eaten smoked or fresh, and isinglass is made from their swim bladders (Robins, Ray, and Douglass 1986:46). Sturgeon are among the most easily identified of fish species, as the most abundant faunal remains consist of hard bony "scutes" which lie in five rows along their bodies.

The herring family (Family Clupeidae) is represented by at least two species: the alewife (*Alosa pseudoharengus*) and the Atlantic herring (*Clupea harengus*). As early as March these species migrate into bays for spawning. From late March on through April, the alewife and Atlantic herring move up into the large rivers and small streams, returning to the ocean by summer. Spawning activities of the American shad occur from April to May in the open areas of large rivers and small streams. By summer they, like the herring, return to the ocean (Mansueti and Hardy 1967).

The family of codfish (Family Gadidae) is represented by at least two species: the Atlantic cod and the haddock. Both have long been important commercial species taken by New England fisheries, and their remains have appeared in most if not all New England faunal assemblages. The Atlantic cod (*Gadus morhua*) is typically found within a fathom of the sea bottom, generally in temperatures ranging between 32 and 55° F. In the summer and early fall adult cod congregate in the polar waters around Labrador, withdrawing in later fall and winter to the south or into deeper water. Thus, in the modern period on the New England coast, cod are taken commercially only in fall, winter, and early spring. They usually appear in southern Massachusetts in mid-October, and migrate northward in early May. Younger cod, and others less sensitive to water temperature, remain in shoals and river mouths, usually on rocky bottoms, year round

(Bigelow and Schroeder 1953). The haddock (*Melanogrammus aeglefinus*), a close cousin of the Atlantic cod, also prefers cold water ranging from approximately 35 to 52° F. While also generally migratory, they prefer deeper water and bottoms of broken ground, gravel, and sand. Unlike the cod, they seldom venture into shoals and river mouths near shore.

The striped bass (*Morone saxatilis*), a freshwater member of the family of temperate basses which also includes the white bass and white perch, is a semi-anadromous species which remains in rivers throughout the year, with only a small percentage migrating to bays or possibly the ocean. Spawning begins in April in southern waters and extends into July around the St. Lawrence River (McClane 1965: 167); the deciding factor is water temperature, which must be at least 55-65° F. Now commercially valuable, striped bass were undoubtedly abundantly available in the rivers, bays, and estuaries of southern New England.

AMPHIBIANS AND REPTILES

Amphibian remains from the Paddy's Alley/Cross Street Back Lot/Mill Pond assemblages were fairly rare, with only a single element identifiable to species. The other elements, although not complete or diagnostic enough to be identified with any precision, may have come from frogs or toads.

The single fully identifiable element was from a snapping turtle (*Chelhydra serpentina*). This is a large turtle found in freshwater habitats and brackish tidepools east of the Rockies. Measuring on average some 8-18 inches in length, it prefers water with a soft mud bottom and abundant aquatic vegetation (Ernst and Barbour 1972). Sluggish by day but active at night, it spends most of its time lying on the bottom of a deep pool or buried in the mud in shallow water. It enters hibernation by late October in most places and emerges in the spring. They remain fairly important commercially important in places, and large numbers are caught for making soups and stews (Conant 1975).

BIRDS

A number of birds were found in the Paddy's Alley/Cross Street Back Lot/Mill Pond assemblages, although none appears to have been enormously important in the diet. Domestic birds appear to have been most significant, but several wild species were also found. Domesticated, or at least semi-domesticated, species include the domestic goose, the domestic duck, the chicken, and the turkey.

The domestic goose (*Anser anser*) is a rather large bird, weighing about seven pounds (Miller 1984), but considerably smaller, on the average, than its wild cousin the Canada goose. They were raised largely for their feathers, but could also be fattened and killed after frost (Pryor n.d.). The domestic duck (*Anas platyrhynchos*) cannot be distinguished from the wild mallard; both are in fact sub-species of the same taxon.

Apparently ducks kept and raised were quite common, however, despite the abundance of wild waterfowl in the area.

The domestic chicken (*Gallus gallus*) was an important source of fresh meat as well as eggs, particularly in urban areas where they could be raised on even small houselots. In terms of the actual amount of meat they provided, of course, chickens were not nearly as important as domestic livestock, but they did provide a year-round source of fresh meat.

The turkey (*Meleagris gallopavo*) is essentially a woodland bird. When Europeans first colonized North America, the birds inhabited wide forests, preferring wooded swamps and open hardwood forests, particularly those containing mature mast-bearing trees such as oaks (Johnsgard 1975:12). As land became cleared they adapted to clearings, open fields, savannas, and meadows as they foraged for insects, berries, and other foods (Bent 1963:329). Wild turkeys were taken to Europe, domesticated, and reintroduced to North America. Continuing to breed with their wild progenitor, it is not surprising no osteological distinction can be made between wild and domestic animals. For the purposes of this analysis, however, they have been considered domestic and therefore included with domesticated fowl in the relative dietary estimates.

Wild birds were, and still are, abundant in New England, lying as it does along the Atlantic Flyway. Many species breed in this area, wintering farther to the south; others are year-round residents.

Many of the wild birds in the Paddy's Alley/Cross Street assemblages were waterfowl. One large bird, the Canada goose (*Branta canadensis*), is a year-round resident, breeding in open or forested areas near water (National Geographic Society 1983). Along with the turkey, this was probably the largest bird in any of the assemblages, although its small numbers suggest that it was not a significant source of meat.

Another wild goose, the brant (*Branta bernicula*), is somewhat smaller in size. Primarily a sea goose, it winters on the east coast of the United States and southern Canada, and is rare inland (National Geographic Society 1983).

The dabbling, or surface-feeding, ducks include the mallard (*Anas platyrhynchos*), the gadwall (*Anas strepera*), and the American widgeon (*Anas americana*), among others. They dabble and tip in the shallows of fresh and salt water marshes. Though chiefly vegetarians, they eat some mollusks, insects, and small fish.

The mallard (*Anas platyrhynchos*) ranges throughout much of the Northern Hemisphere. They prefer shallow brackish waters, but some will inhabit bay and coastal marshes, estuarine rivers, or other environmental niches. Their diet includes pondweed, wild rice, bullrushes, martweed, and a variety of other submerged or emergent plants

(Martin et al. 1951). Although "tipping-up" is their common way of feeding, mallards will dive at times to obtain their food (Raitasuo 1964).

Another important group of ducks are the diving ducks, also referred to as pochards. These include North American canvasbacks, redhead, ringneck duck, greater scaup, and lesser scaup. This group of birds commonly winter in protected coastal bays and river mouths. They feed by diving and swimming through water, eating more animal food than the surface-feeding dabblers. One typical diving duck, the North American canvasback (*Aythya valisineria*), is a common inhabitant of the Atlantic Flyway (Chamberlain 1960). It prefers fresh and brackish estuarine bays, which provides large beds of submerged plants, wigeon grass, pondweed, eelgrass, mollusks, and crustaceans to feed on.

The bufflehead (*Bucephala albeola*) is a winter visitor to New England, summering on wooded lakes and rivers farther to the north. In the wintertime it is common in the tidewater regions throughout the United States, however, generally congregating in loose flocks. They tend to nest in woodlands near small lakes, and are found also in sheltered bays and rivers (Robbins, Bruun, and Zim 1966:54; National Geographic Society 1983:86).

The common merganser (*Mergus merganser*) is a fish-eating diving duck common in fresh water (Robbins, Bruun, and Zim 1966:60). It nests in crevices in woodlands near lakes and rivers, and in winter is sometimes found near brackish water, although seldom on the ocean shore. They primarily inhabit the mouths of upper estuarine regions of rivers, which provide relatively transparent water for feeding in fairly shallow waters for fish, their basic diet (Stewart 1962). It may have been either a year-round resident or winter visitor to New England.

A few other birds were also found. The red-throated loon (*Gavia stellata*) breeds on ponds and lakes and on coastal flats; at other times it is found near bays, seacoasts, and estuaries (American Ornithologists' Union 1983:4). The killdeer (*Charadrius vociferus*), a shorebird related to the plover, is found in meadows, fields, and pastures, less often on shores and riverbanks. They nest in open ground, usually on gravel (National Geographic Society 1983). New England is at the northern edge of their wintering range, and there is some question whether they are in fact year-round or only breeding (spring/summer) residents of this area (American Ornithologists' Union 1983; National Geographic Society 1983).

The willet (*Catoptrophorus semipalmatus*) is found across the western United States and Mexico and on the eastern coastline. In the west, they nest in wet fields, marshes, and on lakeshores; eastern birds breed along the coast (Robbins, Bruun, and Zim 1966; National Geographic Society 1983). They are apparently only breeding residents of New England, the eastern birds wintering farther south from North Carolina to Florida.

The heath hen (*Tympanchus cupido*) was among the first birds discussed by early colonists. Sometimes called the "heathcocke," "pheysant," or "grous," it was described by William Wood:

> *Heathcockes and Partridges be common: he that is husband, and will be stirring betime, may kill halfe dozen in a morning. The Partridges be bigger than they be in England, the flesh of the Heathecocks is red, and the flesh of the Partridge white, their price is four pence a pound (Wood 1635, quoted in Bent 1963:265).*

A closely related sub-species, the prairie chicken, is presently confined to remnant prairie areas in the central United States and southern Canada (Johnsgard 1975:53), where they are found in mixed-sex flocks during the late fall and winter, but by early spring the males return to their traditional display grounds in open grasslands. With the loss of virgin grasslands and prairies, heath hen numbers declined seriously; it is thought to have been extirpated in New England by about the 1930s (Bent 1963:264).

By far the commonest of the terrestrial wild birds in the assemblages was the passenger pigeon (*Ectopistes migratorius*). Although now extinct, they were once so numerous that colonists reported that they darkened the skies as they passed. In 1634 it was described by William Wood:

> *The Pigeon of that Countrey, is something different from our Dove-house Pigeons in England, being more like Turtles, of the same colour; but they have long tayles like a Magpie: And they seeme not so bigge, because they carry not so many feathers on their backes as our English Doves, yet are they as bigge in body. These Birds come into the Countrey, to goe to the North parts in the beginning of our Spring, at which time (if I may be counted worthy, to be believed in a thing that is not so strange as true) I have seene them fly as if the Ayerie regiment had beene Pigeons; seeing neyther beginning nor ending, length, or breadth of these Millions of Millions. The shouting of people, the rattling of Gunnes, and pelting of small shotte could not drive them out of their course, but so they continued for foure or five houres together: yet it must not be concluded, that it is thus often; for it is but at the beginning of the Spring, and at Michaelmas, when they returne backe to the Southward; yet are there some all the yeare long, which are easily attained by such as looke after them. Many of them build amongst the Pine-trees, thirty miles to the North-east of our plantations,; joyning nest to nest, and tree to tree by their nests, so that the Sunne never sees the ground in that place, from whence the Indians fetch whole loades of them (Wood 1865:31-32, quoted in Schorger 1973:7).*

The perception of the vast numbers of passenger pigeons, noted in many early accounts, may in part be due to its unusual behavior, as Bent (1963:359) states:

> *The passenger pigeon was such a spectacular species in its migratory flights, its roostings, and its nestings, in which such enormous numbers took part, that there are many references to them from the times of the earliest pioneers.*

They preferred a forested habitat, foraging in cultivated or open areas adjacent to the forest.

In addition to the passenger pigeon, two other members of the Family Columbidae are quite common, at least in the modern period. The rock dove (*Columba livia*) was introduced from Europe, and is now widespread and common, nesting largely on buildings and bridges. The mourning dove (*Zenaida macroura*) is even more abundant and widespread, inhabiting farmyards, grassy meadows, cultivated fields, and even urban areas (National Geographic Society 1983).

MAMMALS

Mammals were far and away the most important sources of meat in the assemblages, with the vast majority provided by domestic livestock. Several wild species were also found, however, along with several so-called "commensal" species such as rats, dogs, and cats.

The eastern gray squirrel (*Sciurus carolinensis*) prefers a mature hardwood habitat with a dense undergrowth. Its range may vary depending on food availability, population size, and age. They consume a diversity of foods including acorns, a variety of nuts, fruits, seeds, certain tree barks, fungi, and insects (Flyer and Gates 1982).

It is thought that the Norway rat (*Rattus norvegicus*) arrived in North America from Europe (Jackson 1982), carried over in the holds of ships. Like its smaller cousin the roof rat (*Rattus rattus*), which probably arrived even earlier, they are endemic to most areas, particularly crowded urban or semi-urban places. Regarded as vermin, as today, they transmit plague and murine typhus, among other diseases, and were probably at least part of the reason that cats were kept by early New Englanders.

The family of dogs and wolves (Family Canidae) includes four principal species: the gray wolf (*Canis lupus*), the red wolf (*Canis rufus*), the coyote (*Canis latrans*), and the domestic dog (*Canis familiaris*). Gray wolves, currently confined largely to Canada and the far northern United States, and coyotes were found over most of North America. Red wolves, now extinct in the wild, were once found throughout the Southeast and mid-Atlantic regions, up into southern Pennsylvania (Paradiso and Nowak 1982). All three species are powerful carnivores, preying, given the opportunity, on domestic livestock as well as deer and other large mammals.

The domestic dog, which is often osteologically indistinguishable from its wild cousins, was undoubtedly kept for several practical purposes as well as for companionship. The domestic cat (*Felis domesticus*) was valued as a mouser, particularly in urban areas where rats and mice were clearly a significant problem.

As on most eighteenth-century sites throughout the English colonies, indeed as on virtually every site inhabited by humans, species of the Order Artiodactyla are the most commonly identified animals. It has been suggested that one reason for this is that flesh from carnivores has a gamier taste. Whatever the reason, the inhabitants of Paddy's

Alley and Cross Street consumed primarily, like humans throughout the ages, animals from this order (Davis 1987).

In keeping with every faunal assemblage from English colonial sites along the eastern seaboard, these faunal assemblages contained only small amounts of deer. The white-tailed deer (*Odocoileus virginianus*) is the largest of the wild mammals, and is represented in four of the assemblages. An adaptable herbivore, deer inhabit most environmental settings and consume a diversity of foods, selecting the most nutritional and tasty foods available. Their activity region depends on a number of factors, including population size, season of the year, and weather conditions (Hesselton and Hesselton 1982).

During the early colonial period they were quite prevalent, and large numbers of deer remains are found on the earliest historic sites. Beginning in the mid-seventeenth century in the coastal region of the Chesapeake, it is known, deer populations declined, as evidenced by the decreasing number of bones found on archaeological sites from this time period (Miller 1984). Deer populations in New England were no doubt equally decimated, but archaeology in New England has not produced as many faunal assemblages from which this evidence comes. Analysis of the Fort Pelham faunal remains, which come from Massachusetts' frontier during the mid-eighteenth century, show that at that time deer remains made up 12% of the NISP (Bowen 1975a). In rural but populated Portsmouth, Rhode Island during the same time period, the Mott Farm site showed venison made up far less of the diet, some 0.1% of the total NISP (Bowen 1975b). But the extent to which deer were hunted, and how deer populations fluctuated through the combined impact of hunting and development of forested lands, is not clear.

The domestic members of the Order Artiodactyla found in the Paddy's Alley and Cross Street assemblages include the domestic pig (*Sus scrofa)*, the domestic cow (*Bos taurus*), the domestic sheep (*Ovis aries*), and the domestic goat (*Capra hircus*).

The domestic cow was the most important source of meat in all the Paddy's Alley and Cross Street assemblages. This is indicated not only by the large number of cow and calf bones, but also by the biomass and meat weight estimates.

Cattle arrived with the earliest English colonists. They flourished in their new environment and soon became the primary contributor to the diet throughout the English colonies in North America. As early as the mid-1600s herds had become well enough established that beef became the mainstay of the colonists' diet, a position it held until at least the 1800s and possibly throughout the twentieth century (Bowen 1991; Ross 1980). Providing meat, milk, and muscle, these animals served many purposes. Throughout New England, where rocky soils were well suited for grazing, farmers established herds. Early on they flourished, enough that some were able to sell surpluses to newcomers. Primarily, though, these animals were essential to the New Englander's well being, providing both meat and quantities of milk which was made into butter and cheese. Just like pork and lard, they constituted an important source of protein (Bowen 1990a).

Another major contributor to the meat diet is the domestic pig. Pig was present in all of the assemblages, averaging around 10% of the total biomass. It is clear that the domestic pig was an important food source from the initial years of settlement on through the twentieth century. It was an efficient, inexpensive animal for farmers to raise, and its easily-salted flesh was almost perfect for use as a year-round source of preserved meat (Bowen 1990a). Allowed to roam in the woodlands, it fed on mast, roots, and whatever else was available. It required little care, was a prolific breeder, and rapidly grew to slaughter weight. In addition, pigs provided 65-80% of dressed meat per individual after slaughter, in comparison to cattle, which provided only about 50-60% (Reitz, Gibbs, and Rathbun 1985).

Several pathologies are evident in the pig remains. On a cranium from Feature 4 of the Cross Street Back Lot (unique bone number 11258, lot number 6410 from sub-phase II-1), in the region of the frontal sinus, there is a surgical incision referred to as trephination. At its widest point the hole is 48.62 mm. On the left side of the cranium the cut is smooth and circular, while on the right side of the cranium its edges are rough and jagged, looking much like butcher cuts. Records of veterinary medicine recommending trephination go back as far as the Babylonian Code of Eshnunna (circa 1900 B.C.).

Like the human skull, mammalian skulls contain sinuses that can become infected. Both cattle and horses are prone to these infections. Since sinuses extend up into horn cores and when polled, cattle are easily infected, and since in horses sinuses to the nasal cavity are situated higher than the lowest point of the sinuses, they too are easily infected. If a purulent infection develops, it is impossible for the pus to drain out. Baker and Brothwell (1980:165) made no mention of swine being prone to sinus infections, but the positioning of the trephined hole in the frontal bone makes it rather clear that this individual had suffered from a sinus infection. If infections become chronic, the only effective treatment is to trephine one or more holes over the lowest part of the sinus.

Present on a pig scapula (unique bone 9386, from lot 6347 in Feature 4, sub-phase II-1), are massive exostoses (new bone formations) around the periphery of the glenoid. There also appears to be an ankylosis (joint fusion), as is evidenced by a rough and pitted surface on the glenoid, which has been extended beyond the original articular surface. A possible cause is osteoarthritis, although the lack of grooving indicates that other possible causes might be scurvy, tumours, or bacterial infections (Baker and Brothwell 1980:117, 197-201).

A third specimen is a complete tibia (unique bone number 12480, from lot 6835 in Feature 4, sub-phase I-2), from an immature pig. This bone has on the distal half a general swelling, appearing as a massive inflammation. According to Baker and

Brothwell (1980:64), such inflammations can be the result of a non-specific infection of the bone via the blood stream. Lodging in a Haversian system, especially in a young animal, causes osteomyelitis. Such infections commonly affects the radius, ulna, and tibia, and less frequently the metapodials.

Baker and Brothwell state that infected animals are more prone to other diseases, such as the immature pig's osteomyelitic condition. Parasites found in Feature 4 (Driscoll 1995) support their view. Present in the feature are *Trichostrongylus* spp., an intestinal roundworm commonly found in herbivores, *Taenia* spp., a pork or beef tapeworm, and *Ascaris lumbricoides* and *Trichuris trichiura (suis)*, both of which are strongly associated with swine. Driscoll makes special note of a close connection between humans and animals. Although swine have their own forms of *Ascaris* and *Tricuirs*, the human and pig forms are similar enough that given an opportunity cross-infection commonly occurs. She further notes that the presence of these animals and exposure to their feces, either in the form of night soil or hand-to-mouth contamination could have resulted in human infections.

Equal to, if not more important than, the domestic pig to the Paddy's Alley/Cross Street/Mill Pond inhabitants was the domestic sheep. Originally brought in to provide wool primarily, sheep also provided farmers with meat and a source of income. To encourage wool production for home use, in 1648 the Massachusetts Bay Colony gave sheep special privileges in common pastures, and later in 1654 prohibited the exportation of sheep and the slaughter of rams and wether lambs under two years of age (Bidwell and Falconer 1925:28). Over time, sheep maintained an important position in New England husbandry, providing farm families with wool and meat. While sheep were raised primarily for their wool, the by-product, mutton, remained a relatively small but important meat in the New Englanders' diet throughout the colonial period (Bidwell and Falconer 1925:110; Bridenbaugh 1974; Russell 1976).

Introduced to the New World even before sheep were the goats, who are hardier, better able to protect themselves from predators, and will browse on scrub. They produced for the early colonists both milk and meat (Gregg 1988; Bidwell and Falconer 1925:18, 32). But as fields were established and predators brought under better control, sheep were introduced in increasingly large numbers. By the 1650s sheep had replaced most of the goats. According to Edward Johnson's *Wonder Working Providence of Sions Savior in New England*, in 1650 Lynn, Massachusetts, "Goates which were in great esteeme at their first coming, are now almost quite banished..." (Johnson 1910 in Bidwell and Falconer 1925:32). Probate inventories show that by the last quarter of the seventeenth century goats had all but vanished, though could still be found amongst those of the poor, as was seen in the goats left to support Adam Mott of Portsmouth, Rhode Island (Bowen 1975b; Brown 1987).

In faunal analysis, sheep and goat bones are usually placed in the same category, usually referred to as sheep/goats or sometimes "caprines," since despite outward appearances they are osteologically quite similar. Distinctions can be made between sheep and goat only by a few characteristics of a few specific elements. Whenever possible such distinctions were made, and it is on the basis of these identifications that a sense about the relative importance of sheep and goats is obtained. It appears that sheep were much more abundant in the assemblages, and with the historical evidence it can be suggested that the vast majority of the "sheep/goat" remains were in fact sheep.

Other categories were utilized for grouping bones of medium-sized animals which could not be identified to species. These groupings include two categories of the Order Artiodactyla (even-toed ungulates): Artiodactyla I, which encompasses sheep, goat, deer, and pig, and Artiodactyla II, a more specific group which includes sheep, goat, and deer but not the more osteologically distinguishable pig.

Determining Relative Dietary Importance

Among the most important goals of faunal analysis, though by no means the only one, is the determination of relative dietary importance. As mentioned earlier, several quantification methods are used, including the number of identified specimens (NISP), minimum number of individuals (MNI), usable meat weight, and biomass methods. In the following section, we will discuss relative importance as measured primarily by the biomass method; full details of the results from all methods are given in the tables in Appendix C.

The following discussion is broken down by the assemblages and sub-assemblages chosen by Cook and Balicki (1994) for the Paddy's Alley/Cross Street bones, and provided by Charles Cheek (1994) and Jo Balicki (1995) for the Mill Pond and the second Cross Street Back Lot (Feature 4) remains. These are mostly based on household-level associations, which are provided where noted in the 1994 evaluation report. MNI's were separately counted, and the appropriate quantification figures worked out, for all Paddy's Alley assemblages that were broken into east and west lot sub-assemblages (see Table 1 and Appendix A). For the purpose of clarity, however, these west/east sub-assemblages are discussed in the sections relating to the separate phases rather than individually.

Relative percentages for the major groups (fish, reptiles/amphibians, wild birds, domestic birds, wild mammals, pigs, cattle, sheep/goats, other domestic mammals, and commensals) are given in Table 3.

Table 3.
Relative Dietary Importance
(Expressed as Percentage of Total Biomass)

	Fish	Reptile/ Amphibian	Wild Birds	Wild Mammals	Domestic Birds	Pig	Cow	Sheep/Goat	Other Dom Mammals	Commensals	Biomass (kg)
Paddy's Alley:											
PA Phase I	0.1	0.0	0.1	0.0	0.3	8.7	56.4	9.7	2.4	0.1	53.22
PA Phase I West	0.1	0.0	0.2	0.0	0.4	9.3	54.0	11.9	3.8	0.0	34.20
PA Phase I East	0.2	0.0	<0.1	0.0	0.1	7.7	60.7	6.1	<0.1	0.3	22.52
PA Phase II	0.2	0.0	0.2	0.0	1.0	10.6	39.6	22.9	0.3	<0.1	52.36
PA Phase III	0.5	0.0	0.1	0.2	0.6	8.1	40.7	17.1	3.2	<0.1	155.38
PA Phase III West	1.4	0.0	<0.1	0.0	0.2	8.5	36.3	21.6	5.9	0.1	40.32
PA Phase III East	0.2	0.0	0.1	0.2	0.7	8.0	42.0	15.8	2.3	0.1	123.24
PA Phase IV	1.1	0.0	0.1	0.0	0.5	8.7	42.2	18.8	5.3	0.2	355.44
PA Phase IV West	1.7	0.0	0.1	0.0	0.5	8.7	37.9	21.3	5.8	<0.1	177.33
PA Phase IV East	0.5	0.0	0.1	0.0	0.5	8.5	46.0	16.6	4.7	0.3	200.48
PA Phase IV-1 West	2.4	0.0	0.1	0.0	0.2	6.2	47.1	20.8	9.5	0.0	63.27
PA Phase IV-1 East	0.1	0.0	0.1	0.0	0.0	12.5	49.7	8.2	0.1	0.0	14.41
PA Phase IV-2	2.0	0.0	0.3	0.0	1.3	17.8	20.9	25.9	5.8	0.0	13.48
PA Phase IV-3 West	1.7	0.0	0.1	0.0	0.5	9.3	34.9	20.9	3.8	<0.1	115.13
PA Phase IV-3 East	0.6	0.0	0.1	0.0	0.5	8.2	45.9	17.0	5.0	0.3	193.19
PA Phase V	0.2	0.0	<0.1	0.0	1.1	1.7	56.7	20.2	4.5	0.3	19.90
PA Phase VI	0.0	0.0	0.0	0.0	0.0	5.7	23.1	32.1	3.2	0.0	4.64
PA Phase VII	0.5	0.0	0.3	0.7	0.6	9.7	37.0	17.5	7.3	0.1	52.39
PA Phase VII West	1.9	0.0	0.0	0.0	0.0	3.2	76.5	6.1	0.0	0.0	1.75
PA Phase VII East	0.4	0.0	0.3	0.7	0.6	9.8	36.1	17.8	7.4	0.1	51.23
PA Phase IX	0.0	0.0	0.0	0.0	0.0	7.2	75.2	16.2	0.0	0.3	5.70
Cross Street Back Lot:											
CSB Phase I	0.1	<0.1	0.9	0.0	0.3	4.5	72.8	14.6	<0.1	2.0	62.45
CSB F4 Phase I	1.1	0.0	0.2	0.9	0.5	12.0	61.7	12.2	0.0	0.4	163.41
CSB F4 Phase I-2	2.7	0.0	0.1	0.0	<0.1	61.9	23.1	4.5	0.0	0.0	14.10

Table 3.
Relative Dietary Importance
(Expressed as Percentage of Total Biomass)

	Fish	Reptile/ Amphibian	Wild Birds	Wild Mammals	Domestic Birds	Pig	Cow	Sheep/Goat	Other Dom Mammals	Commensals	Biomass (kg)
CSB F4 Phase I-3	21.6	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.41
CSB F4 Phase I-5	1.1	0.0	<0.1	0.0	0.4	11.4	68.9	6.8	0.0	<0.1	78.62
CSB F4 Phase I-7	0.1	0.0	0.1	0.0	0.0	0.7	27.9	51.8	0.0	0.0	7.59
CSB F4 Phase I-8	1.1	0.0	0.2	0.0	0.2	4.5	65.8	19.8	0.0	0.1	38.49
CSB F4 Phase I-10	1.6	0.0	0.5	3.4	1.3	5.4	63.2	11.4	0.0	0.2	45.32
CSB Phase II	0.1	0.0	0.0	0.0	0.1	5.1	74.4	9.7	0.0	0.9	89.86
CSB F4 Phase II	1.9	0.0	0.1	0.0	0.5	7.3	58.9	14.7	0.0	0.1	209.51
CSB F4 Phase II-1	2.3	0.0	0.1	0.0	0.5	7.8	59.5	16.4	0.0	0.1	129.44
CSB F4 Phase II-2	1.0	0.0	<0.1	0.0	<0.1	4.3	67.7	7.6	0.0	0.1	68.98
CSB F4 Phase II-3	3.6	0.0	<0.1	0.0	1.2	12.1	34.6	24.4	0.0	0.0	31.29
CSB Phase III	0.6	0.0	0.1	0.0	0.3	10.5	47.1	17.8	<0.1	<0.1	95.27
CSB Phase IV	0.1	0.0	0.1	0.0	2.7	6.4	56.7	14.6	<0.1	0.1	9.83
CSB Phase V	1.4	0.0	0.1	0.0	2.1	7.1	51.8	17.2	1.4	0.1	60.69
Mill Pond:											
MP Phase I	0.2	0.0	0.1	0.0	0.4	13.1	31.7	16.9	0.0	0.6	61.16
MP Phase III	0.0	0.0	0.0	0.0	0.6	5.9	64.7	11.3	0.0	0.0	32.18
MP Phase IIIa	0.4	0.0	0.1	0.2	3.0	12.4	24.6	10.3	0.0	0.0	130.07
MP Phase IV	0.1	0.0	0.0	0.0	1.1	6.2	54.9	13.1	0.0	0.1	73.15
MP Phase V	0.2	0.0	0.0	0.0	1.5	10.6	37.8	15.3	1.4	0.0	105.93

Note: PA=Paddy's Alley; CSB=Cro.1ss Street Back Lot; MP=Mill Pond.

Paddy's Alley Assemblages

Phase I—Ca. 1700 Initial Occupation

Only 398 bones were submitted for analysis from Phase I, described by Cook and Balicki (1994:81-85) as "ephemeral and discontinuous" on the east side of the property and "more extensive" on the west, representing a "buried plow zone and at least one episode of early fill." According, again, to this report, Phase I deposits on the west side were associated with carpenter John Jepson Jr., possibly used as a garden or grass-covered lawn. The scattered deposits on the east were apparently related to tenants living on a property owned by the Lake family.

Unsurprisingly, the zooarchaeological analysis suggests that cattle were by far the most important meat providers in this period, representing over 55% of the total biomass (and 69% of the total calculated by the usable meat weight method). Pig and sheep or goat were the next most important species, roughly equal both in terms of total biomass (pig, 8.7%; sheep/goat, 9.7%) and usable meat weight (pig, 15.3%; sheep/goat, 13.4%). Other species were virtually insignificant in terms of total contribution to the diet, but included codfish or haddock, domestic goose, Canada goose, turkey, chicken, and passenger pigeon. A single domestic cat bone was also found.

There was virtually no difference in dietary contribution between the Phase I West and Phase I East sub-assemblages (248 and 150 bones, respectively), although the wider variety of species was found on the west part of the property.

Phase II—Ca. 1710 Drain Installation

Some 752 bones were associated with Phase II, described by Cook and Balicki (1994:86) as "activities and deposits ... associated with the construction of a large drain ... constructed along the west side of the east lot." These deposits were probably related to the transition of property ownership from the Lake family to Samuel Wentworth in 1712. Once again, cattle were by far the most important food providers, with 39.6% of the total biomass (61% of the usable meat weight). In this case, however, sheep/goat were more significant than pig, with 22.9% of the total biomass as opposed to 10.6%. A relatively wide variety of animals were found, including red-throated loon, domestic goose, Canada goose, turkey, chicken, passenger pigeon, and willet. One domestic cat and one dog or wolf bone were also found.

Phase III—Ca. 1700-1720 Occupation

Phase III represents activities on both the east and west lots between ca. 1710 and 1720 (Cook and Balicki 1994:94). The eastern deposits, however, are apparently related to filling and dumping, relating to the transition of property ownership from the Lake family to Samuel Wentworth in 1712 and its later transfer to Nathaniel Henchman in

1717. The western-lot activities, which included both garden maintenance and what may have been a boundary/drainage ditch, were related to continued occupation by the Jepson family.

This assemblage is among the largest of the groups submitted for analysis, trailing only Phase IV, with 2574 bone elements and at least 41 individual animals. Cattle were most abundant, representing 40.8% of the total biomass and 64.6% of the usable meat weight. Next most important were sheep/goat with 16.7% of the biomass (9.1% of the usable meat weight) and pig with 7.8% of the biomass (16.8% of the usable meat weight).

There is quite a lot of variety in the assemblage, with species represented including shark, haddock, cod, domestic goose, Canada goose, domestic duck or mallard, turkey, chicken, passenger pigeon, squirrel, rat, domestic cat, and white-tailed deer. This was, if fact, among the only assemblages with squirrel or deer, suggesting perhaps somewhat more reliance on wild food sources, which would likely have been obtained by individual hunting, during this earlier period.

The principal difference between the west and east lot sub-assemblages include a greater percentage of fish (1.4 to 0.2%) and a greater percentage of sheep/goat (21.6 to 15.0%) in the west group. Since the west group contains only 582 elements, however, with just 183 of them identifiable, this may well be an artifact of this small sample.

Phase IV—Ca. 1720-1730s Privy and Occupation

Phase IV was by far the largest assemblage submitted for analysis, with a total of 5605 elements representing at least 100 individuals. It was broken into three sub-phases covering the period from ca. 1720 to the 1730s.

Owners of Paddy's Alley West during this period included the Jepson family until 1728/9, after which it was sold to tailor Elisha Hedges. Hedges transferred the property to merchant/shopkeeper Gershom Keyes in 1730; Keyes briefly sold it to mariner Benjamin Townsend in October of that year, obtained it again in 1732, and finally sold it to merchant Thomas Woolford a year later (Cook and Balicki 1994). Woolford apparently let the property out to tenants during his six-year ownership.

Paddy's Alley East was owned by Nathaniel Henchman until 1726, when he sold it to pewterer John Carnes. Carnes owned and occupied the property for the next few decades, during which several changes were undertaken, including Phases V and VI.

Phase IV-1—Ca. 1720-1725 Occupation (Privy)

Phase IV-1, described by Cook and Balicki (1994:97) as "the period between the deposition of the fill and midden matrices representing the Wentworth and Henchmen occupation (Phase III) and the beginning of the Carnes occupation (Phase IV-3)," was found on both the east and west lots. On the west, the phase comprised the construction, use, and abandonment of Feature 20, a small privy along the lot line. The privy was probably filled after the death of John Jepson Jr. in 1721, and the occupation of the property by his widow and children until 1728 (Cook and Balicki 1994). Some 827 bones from this sub-assemblage were analyzed. Another 222 bones were analyzed from the sub-assemblage on the east.

The Phase IV-1 assemblage is dominated by cow (47.1% of the biomass in the west sub-group, 49.7% in the east), followed by sheep/goat (20.8 and 8.2%, respectively) and pig (6.2 and 12.5%). Fish were somewhat more important in the west sub-group, while also included haddock, domestic duck or mallard, chicken, and passenger pigeon. The smaller east sub-group contained only duck and passenger pigeon in addition to the usual cow, pig, and sheep/goat.

Phase IV-2—Ca. 1725-1730 Occupation (Privy)

Phase IV-2 is represented, only on the west lot, by another privy (Feature 32) adjacent to the lot line (Cook and Balicki 1994:104). Only 64 bones, 37 of them identifiable, were submitted for analysis. Relative dietary importance is impossible to determine from a group this small, but identified species include haddock, cod, goose, domestic duck or mallard, chicken, passenger pigeon, cow, pig, and sheep/goat, along with the single fragment of a heath hen recovered from either of the sites.

Phase IV-3—Ca. 1730s Occupation

Phase IV-3, the largest of the sub-assemblages from Phase IV, represents two very different activities in the east and west lots. On the east lot, it represents the acquisition and first use of the property by pewterer John Carnes (Cook and Balicki 1994:104). On the west, it represents continued use of the garden area begun in the early 1700s.

Phase IV-3 West comprised 1902 bone elements, 689 of them identifiable. Cattle were again most important, with 34.9% of the total biomass and 60.3% of the usable meat weight. Sheep/goat (20.9% of the biomass, 12.5% of the usable meat weight) and pig (9.3% and 20.1%) were next most important. Fish were moderately significant, at least in relation to the other assemblages, and included sturgeon, haddock, and cod. Domestic goose, domestic duck or mallard, diving duck, turkey, chicken, passenger pigeon, rat, and domestic cat were also found.

Phase IV-3 East comprised 2592 elements, 952 of them identifiable. Again, cattle were most important with 45.8% of the biomass and 69.4% of the usable meat weight, followed by sheep/goat (17.4 and 10.1%) and pig (8.4 and 18.7%). Haddock, striped bass, domestic goose, domestic duck or mallard, turkey, chicken, passenger pigeon, rat, dog or wolf, and domestic cat were also found.

Phase V—Ca. 1730 Construction of Structure

Phase V, representing the construction of a probable warehouse building by John Carnes at the rear of the Paddy's Alley East property (Cook and Balicki 1994:109), consisted of 186 bones, 93 of them identifiable. Cattle were most important, with 56.7% of the total biomass, followed by sheep/goat at 20.2%. Pig was relatively lightly represented, with only six bones representing 1.7% of the total biomass. However, it should be noted that, using the usable meat weight method, pig is actually the second most important species at 21.8%, with sheep/goat at 10.2%. Clearly, this is an artifact of the very small sample size, as is the relatively narrow range of species represented (only codfish, goose, duck, chicken, and passenger pigeon along with cow, pig, and sheep/goat).

Phase VI—Ca. 1730 Use of Structure

Phase VI represents the use of the warehouse constructed by John Carnes around 1730. Cook and Balicki (1994:117) suggest that the building may have been used for a time for metalworking.

Only 46 bones from this phase were analyzed, just 18 of which were identifiable. In terms of biomass, sheep/goat was the most important with 32.1%, followed by cow with 23.1% and pig with 5.7%. However, the usable meat weight method suggests that cow was by far the most important at 68.4%, followed by sheep/goat (20.5%) and pig (17.1%). Again, as in Phase V, this is clearly an artifact of the extremely small sample. Interestingly, absolutely no fish, reptile/amphibian, or bird bones were found in this group.

Phase VII—Ca. 1760-1790 Occupation

Phase VII was, in effect, the latest intact assemblage on the Paddy's Alley site, as stratigraphically later deposits were largely destroyed by construction of the Central Artery in the 1950s (Cook and Balicki 1994:117). Activities in the east lot postdated destruction of the warehouse built around 1730, while in the west the land continued as open space or a garden. Paddy's Alley East was associated with John Carnes, his son John Carnes Jr., and merchant Jonathan Williams; Paddy's Alley West with William Simpkins, several members of the Walker family, and a few others.

Only 13 bones from the west lot, four of them identifiable, were submitted, so essentially the analysis of this phase is based solely on the east lot deposits (comprising 678 bones). Cow was most important with 36.1% of the biomass (62.2% of the usable meat weight), followed by sheep/goat (17.8% of the biomass) and pig (10.5%). Domestic goose, domestic duck or mallard, common merganser, killdeer, chicken, passenger pigeon, domestic cat, and white-tailed deer were also found.

Phase VIII—Ca. 1800 Early Republic Activity

No bones from this phase were submitted for analysis.

Phase IX—19th- Through 20th-Century Occupation

Only 12 bones were submitted from Phase IX, the nineteenth- through twentieth-century occupation. They are of no particular significance, with 1 pig, 3 cow, and 4 sheep/goat elements represented. For the sake of completeness, summary tables were prepared, but any sort of meaningful analysis is impossible.

Relative Importance Through Time

There is little significant variation in relative dietary importance through time, at least in terms of the rank order of the major contributors to the diet. Cow, the principal food contributor, ranges from 56.4% of the total biomass in Phase I to 37.0% in Phase VII, however, and there is a general trend toward relatively lower percentages of cow through time (albeit this species is always at least twice as important in terms of biomass than any other). Sheep/goat becomes more important through time, particularly after Phase I (ca. 1700). Perhaps this represents the increasing importance of sheep in the New England subsistence system. The relative importance of pig is fairly constant except in Phase IV-1-E and IV-2, both small assemblages where the high percentage of pig is easily explained by sample variation.

Domestic birds remain fairly constant in importance, contributing very little to the overall diet. Likewise, wild birds are constantly insignificant as a percentage of the total. Wild mammals, principally deer, are seen only in Phases III and VII in any significant numbers.

Fish do increase in importance from Phase III on (in other words, after 1720). This trend will be discussed in more detail elsewhere. Commensals are generally not common.

Cross Street Back Lot Assemblages

Phase I—Ca. 1700 Initial Occupation

Phase I at the Cross Street Back Lot site comprises the construction and first use of Feature 4, a large brick privy (Cook and Balicki 1994:130-131). The privy was apparently built by then-owner and widow Katherine Nanny (Naylor). According to Cook and Balicki, Nanny moved from the property around 1700, and the property (and presumably the privy) was then used for some years by tenants.

The Phase I faunal assemblage consisted of 298 bones, 210 of them identifiable. As in Phase I at Paddy's Alley, cattle were the most important food providers, with 72.8% of the total biomass (and 77.9% of the usable meat weight), followed by sheep/goat (10.2% of the biomass) and pig (4.5%). Again, as in several of the smaller Paddy's Alley assemblages, the positions of pig and sheep/goat are reversed in the usable meat weight calculations, with pig at 12.4% and sheep/goat at 8.7%. No other taxon was very significant, although duck, turkey, passenger pigeon, rat, domestic cat, and an unidentified amphibian were also found.

Phase I—Ca. 1700 Earliest Use of Feature 4

Phase I deposits from Feature 4, submitted for analysis in 1995, are associated with eight discrete soil deposits (Balicki 1995), of which six contained faunal material which was submitted. Some 1618 bones were analyzed, with 885 of them identifiable. Cattle was most significant at 61.7% of the total biomass (66.0% of the total meat weight), followed by sheep/goat (12.2% of the biomass) and pig (12.0%). A great variety of species were found, including lobster, herring, alewife, cod, haddock, striped bass, goose, duck, turkey, chicken, passenger pigeon, rat, cat, pig, white-tailed deer, cow, and sheep or goat.

Phase I-2—Ca. 1700 Earliest Fecal Deposition

Sub-phase I-2 was the earliest period of fecal deposition, and was most characterized by a nearly complete immature pig skeleton. This animal, part of which was also found in the sub-phase I-5 assemblage, had a significant pathology in the tibia (lower hind leg bone), discussed in the description of identified taxa section. The presence of this nearly complete animal drastically skews the meat weight and biomass percentages, rendering them virtually meaningless for this particular sub-grouping. It should be noted, however, that there is a fair variety of taxa, including lobster, herring, haddock, chicken, passenger pigeon, pig, cow, and sheep or goat.

Phase I-3—Ca. 1700 Fill Cap

Sub-phase I-3 may represent a cleaning event. Only 38 bones were found, just 10 of which were identifiable.

Phase I-5—Ca. 1700 Fecal Deposition

As mentioned, sub-phase I-5, another phase of fecal deposition, contains part of the immature pig found in sub-phase I-2, suggesting that the two deposits were nearly contemporary. This sub-phase contained 559 bones, 292 of them identifiable. Cow was by far the most important species, followed by pig and sheep or goat. Lobster, alewife, herring, cod, haddock, turkey, chicken, passenger pigeon, and rat were also found.

Phase I-7—Ca. 1700 Fill Around Cross-Piece

Sub-phase I-7, a fill event relating to rebuilding of the structure, contained only 47 bones, 21 of them identifiable.

Phase I-8—Ca. 1700 Fecal Deposition with Mixed Fill and Wood Debris

Sub-phase I-8, fecal deposition mixed with wood debris, contained 194 bones, 106 of the identifiable. Again cow was most important, followed by sheep or goat and pig. Lobster, herring, cod, haddock, striped bass, chicken, passenger pigeon, rat, and cat were also found.

Phase I-10—Ca. 1700 Fecal Deposition

Sub-phase I-10, a thick fecal deposit, was represented by 346 bones, 192 of them identifiable. Again cow was most important, with sheep or goat and pig bringing up behind. One element from a white-tailed deer was found, along with lobster, cod, haddock, goose, duck, turkey, chicken, passenger pigeon, rat, and cat.

Phase II—Ca. 1710 Early 18th C. Use of Feature 4

Phase II deposits are associated with a change of function of Feature 4, which ceased use as a privy and became a drain (Cook and Balicki 1994:138). Occupied by tenants at the start of the period, Cook and Balicki suggest that the functional change was related to the acquisition of the property by cabinetmaker Job Coit and his family in 1716.

Some 354 bones, 190 of them identifiable, were recovered from Phase II (this excludes the Phase II assemblage submitted in 1995 which will be discussed below). Again, cattle were most important with 74.7% of the total biomass (79.7% of the usable meat weight), followed by sheep/goat (9.7 and 7.2%, respectively) and pig (5.1 and 8.3%). Haddock, goose, duck, chicken, and domestic cat were also found.

Phase II—Ca. 1716 Use of Feature 4

The Phase II assemblage submitted in 1995 is much larger, with 2195 bones (918 of them identifiable), but otherwise conforms reasonably well to the assemblage discussed above. Cow is most important with 58.9% of the total biomass, followed by sheep or goat (14.9%) and pig (7.3%). Haddock, cod, striped bass, turtle, goose, duck, turkey, chicken, passenger pigeon, rat, and cat were also found.

Phase II-1—Ca. 1716 Possible Percolation Fill

Sub-phase II-1 was the largest of the Feature 4 sub-phases, with 1248 bones, 579 of them identifiable. Cow again was most important, followed by sheep or goat and pig.

Haddock, cod, striped bass, turtle, duck, turkey, chicken, passenger pigeon, rat, and cat were found.

Phase II-2—Ca. 1716 Clay Fill Around Barrel and Trough

Sub-phase II-2 contained 587 bones, 184 of them identifiable. Like sub-phase II-1, cow was most important, followed by sheep or goat and pig. Haddock, cod, duck, chicken, passenger pigeon, and cat were also found.

Phase II-3—Ca. 1716 Deposition Matrix within Tub

Sub-phase II-3 was represented by only 360 bones, 155 of them identifiable. Species present included haddock, cod, goose, chicken, pig, cow, and sheep or goat.

Phase III—Ca. 1720s-1740s Privy Closure and Abandonment

The largest of the Cross Street Back Lot assemblages submitted prior to 1995, with 1101 elements, is Phase III, a fill deposit used to seal the now-abandoned Feature 4 and grade a portion of the surrounding property (Cook and Balicki 1994:138). Cattle again were most important with 47.1% of the total biomass, followed by sheep/goat (17.8%) and pig (10.5%). A wide variety of species were used, however, including haddock, cod, domestic goose, duck, turkey, chicken, passenger pigeon, and domestic cat.

Phase IV—Ca. 1780-1810 Late 18th- Through Early 19th-C. Occupation

Phase IV represents the construction, use, and abandonment of several new privies between ca. 1780 and 1810, during the occupations of Samuel White, Daniel Gealy, and Jason Wilson (Cook and Balicki 1994:141). Only 103 bones were submitted for analysis, just 35 of which were identifiable. Again, unsurprisingly, cow was most important at 56.7% of the total biomass, with sheep/goat at 7.1% and pig 6.4%. Birds, including domestic goose, domestic duck or mallard, turkey, chicken, and passenger pigeon, were fairly well represented. One Norway rat and the only clearly identified turtle bone (this from a snapping turtle) were found in this group.

Phase V—Ca. 1750-1800 Occupation

Phase V deposits were remnants of second-half eighteenth-century activities on the property (Cook and Balicki 1994:144). Some 513 bones from these deposits were submitted for analysis. Cattle were again most important with 51.8% of the total biomass, followed by sheep/goat with 17.2% and pig with 7.1%. Fish, mainly haddock and cod, were slightly more important than in other assemblages (on the basis of biomass), while the same bird species found in Phase IV deposits were also found here. Six rat bones were also recovered.

Phase VI—19th- Through 20th-Century Occupation

No bones from this phase were submitted for analysis.

Relative Importance Through Time

Like the Paddy's Alley assemblages, there is little significant variation in the rank order of the Cross Street Back Lot assemblages through time. Cow, again, is most important, with over 70% of the total biomass in Phases I and II and close to 50% thereafter. Sheep/goat is consistently second in importance (at least using the biomass method), well above the totals for pig. Domestic birds increase in importance in Phases IV and V (2.1-2.7% as opposed to 0.1-0.3% earlier), while wild birds are only a somewhat significant contributor in Phase I. Fish are most prevalent in Phases I, II, III, and V (but not, interestingly, in Phase IV), while commensals are most abundant in Phase I.

MILL POND ASSEMBLAGES

Phase I—Late 17th to Early 18th C. Domestic

According to a memorandum from Charles Cheek of John Milner Associates (Cheek 1994), which provides preliminary interpretations of the Mill Pond archaeology, Phase I comprised the earliest occupation of the site, probably by a planter or husbandman named William Waters. Some 776 faunal elements were assigned to this phase, 212 of them identifiable. Cow, again, was the most signficant food source, with 31.7% of the total biomass, followed by sheep or goat at 16.9% and pig at 13.1%. Only seven fish elements were found, and only one of these was identifiable to species (in this case an Atlantic cod). Several birds were found, however, including turkey, chicken, passenger pigeon, and a single goose fragment which most closely matches the wild brant (*Branta bernicula*), although it may well have been a very small Canada goose. A single bone from what is most likely a domestic dog was also found.

Phase III—Late 18th C. Fill of Bulkhead

Phase III is of a late eighteenth-century deposit resulting from the fill of a bulkhead, and is associated with the families of braizer William Maycock and/or his son-in-law Joseph Jackson. Only 145 bones were associated with this phase, 75 of them identifiable. Although this makes Phase III unreliable for any real dietary estimates, the typical pattern appears, with cow representing 64.7% of the total biomass, followed by sheep/goat (11.3%) and pig (5.9%). Turkey, chicken, passenger pigeon, and unidentified duck were also found.

Phase IIIa—Late 18th C. Fill Beneath Collapsed Dock

The Phase IIIa deposits represented the fill underneath the collapsed dock, and were comprised of 1448 elements, 429 of them identifiable. The bone from this deposit was quite thoroughly broken up; thus although the percentage of cow is low (24.6% of the total biomass), there is a large group of "large mammal" bones (36.7% of the biomass) which are certainly also predominantly (if not all) cow. Again sheep/goat and pig are next most important (10.3% and 12.4% of the total biomass, respectively). This assemblage also contains a reasonably large number of birds, including at least seven turkeys, five chickens, four passenger pigeons, and one duck. Other species present include Atlantic cod, haddock, and at least one white-tailed deer.

Phase IV—Early 19th C. Landfill

Phase IV comprises the fill over the top of the collapsed dock, resulting from the creation of Pond Street in the early nineteenth century (Cheek 1994). Some 396 bones were assigned to this phase, 177 of them identifiable. Again, cow was most important at 54.9% of the total biomass, followed by sheep/goat (13.1%) and pig (6.2%). Other species present included cod, domestic goose, turkey, chicken, passenger pigeon, Norway rat, and domestic cat.

Phase V—Late 18th C. Domestic

Phase V is a late eighteenth-century domestic deposit composed of material from the Maycock and Jackson households, as well as that of tenants living on the property during that period. Some 1168 bones were analyzed, 412 of them identifiable. Cow was most significant at 37.8 % of the total biomass, followed by sheep/goat (15.3%) and pig (10.6%). Other species included haddock, turkey, chicken, passenger pigeon, unidentified goose and duck, and rat.

Relative Importance Through Time

Like the Paddy's Alley and Cross Street Back Lot assemblages, the remains from Mill Pond demonstrate the basic pattern of meat consumption that persisted in the colonies from the seventeenth century on. Cattle were always the most important meat sources, with sheep/goat (most likely sheep) and pig contributing lesser but still substantial amounts to the diet. Birds, particularly domestic birds, were eaten commonly, as is apparent in the fact that bird bones appear in virtually every assemblage, but they were not a major meat contributor (at least if we believe the zooarchaeological evidence). Fish were increasingly important after the first quarter of the eighteenth century, while reptiles and amphibians (turtles, frogs, etc.) were eaten hardly at all.

Provisioning

While the foregoing discussion of relative dietary importance provides valuable insights into the lives of the various households at the sites, the sample sizes of the assemblages do not generally permit household-level interpretation of meat consumption, husbandry, etc. Fortunately, however, it is possible to view these assemblages at a more general scale, as examples of the artisans and tenants that populated much of Boston during the eighteenth century.

The study of faunal remains has the potential for addressing the full range of foodways-related questions, but zooarchaeologists have been far too pre-occupied with interpreting household subsistence patterns, defining variability primarily in terms of environmental differences, and the social and economic status or ethnic affiliation of the household. In assessing a household's diet, faunal analysts focus on determining the meat diet and preference for certain cuts of meat, interpreting these consumption patterns as the result of environmental constraints, cultural values, or the household's social and economic status (Bowen 1990a, 1992b). However, all phases of foodways—the production, distribution, preparation, and consumption—play an integral role in determining the availability of foods.

To limit our interpretations to adaptation, social and economic status, and ethnicity is to limit our ability to see how the full range of food-related activities can affect faunal remains. We need to look at the much broader context of the subsistence system and how it shapes the household's selection of foods. Subsistence studies should also show how the household relates to its community and how the community and regional system of food production and distribution influences any household's consumption patterns (Bowen 1990a, 1992a; Henn 1985; Landon 1987a, 1987b; Maltby 1985; Zeder 1988, 1991).

Often analyses of urban faunal assemblages have assumed that the provisioning systems in early American urban centers were like today's highly commercialized system, where the prices of different meats are determined by market forces, and individual choices are governed mostly by the economic status of the household under investigation, not availability (Schulz and Gust 1983). For studies focusing on the late nineteenth and early twentieth centuries, this may be true, since by this time rapid transit systems had increased the availability of many foods, and residents living in every U.S. city, as well as many small towns, had come to depend on, and expect, commercially-produced meats. But many zooarchaeologists have gone beyond simplistic studies of status and ethnicity (Bowen 1986, 1990a, 1992a; Henn 1985; Maltby 1985; Crabtree 1990; Lyman 1987a; Landon 1987a, 1987b, 1991). Lyman (1987a), for example, questioned the narrow criteria used to rank cuts of meat, pointing out that the amount of available flesh per cut of meat was an important factor to be considered. Henn pointed out that the assumption that all households participated in the market economy on a full-time basis is invalid. She wrote:

...even in rural areas it was common practice for working class households to keep livestock, such as goats, pigs, and poultry, and to grow vegetables for domestic use. Butcher shop purchases or preparation of household livestock could have been considered luxuries for this segment of the population (Henn 1985:207).

Henn spoke of poorer families living in small communities that were fully integrated in highly commercialized economies, but her statement is equally appropriate for households of all wealth groups living in towns and small cities in developing economies. Today in Third World countries, and historically throughout most of our country's past, there were several alternatives to commercially-produced foods.

In small commercial centers, the individual had a much greater role in provisioning his or her family. Many either raised animals on their property, or simply let them run loose in the streets. Generally speaking, provisioning systems were based on face-to-face relationships, for everyone maintained close contact with rural producers. Those owning nearby farms, or those having kin or friends living in the countryside, could obtain foods from this source. Others, went to the local marketplace where farmers brought foods to town to sell, or they simply purchased foods from farmers selling their produce from carts on the street. Middlemen as we know them today had a relatively small role to play.

Although many of these small commercial centers provided many options to individuals, not all households could participate. Those who lacked personal resources and rural contacts, the poor and newcomer who came to these towns looking for work, depended on the market and retail stores for their food supplies. Dependent on markets, peddlers, and provisioners for food supplies, these peoples' diets were far more restricted (Zeder 1988).

As cities grew, personal face-to-face relationships gave way to impersonal business relationships and all phases of the food system, including the production, distribution, and processing of meats, became specialized. To meet the increased demand, farmers adopted specialized, more efficient forms of husbandry. Middlemen took over the sale of farm goods, butchers increasingly took over the slaughter of farm animals, and butchers //took over the processing of carcasses. As market systems grew, governments generally assumed a strong regulatory role, often forcing the slaughter of animals outside of town and regulating the disposal of "waste parts" such as the head and feet (Maltby 1979, 1985; Zeder 1988).

In these specialized market systems, the exchanges of animal products would be transacted consistently on a large scale and organized either through redistributive or marketing mechanisms. As the rural producer and urban consumer diverged from each other, their diets also diverged. Increasingly, "waste parts" from cattle, pigs, and sheep were kept from the urban consumer, and the consumer began to see less of the animal and more of the "product." The end result was that urban residents lost direct contact with the rural producer, even with the living animal.

Faunal remains found in urban assemblages contain evidence from which we can obtain a measure of the scale of the urban market system. First, age profiles from domesticated cattle, pigs, and sheep show the mark of specialized forms of animal husbandry, hallmarks of a market economy. Second, the variety and relative importance of different animals show whether markets constrained the availability of wild animals. Third, element distributions of the major domestic mammals demonstrate the restriction of certain portions of the carcass such as the heads and feet. And fourth, the presence of saw and chop marks on bone fragments can indicate the presence of professional butchers operating in a fully-commercialized system (Bowen 1990b; Bowen and Manning 1993). Taken as a whole, these pieces of evidence provide a measure of the extent to which the provisioning system has become specialized (Zeder 1988, 1991).

In the 1970s and 1980s the analysis of several faunal assemblages from rural and urban sites in New England revealed some striking patterns in both the cattle kill-off patterns and distribution of skeletal parts for cattle and sheep/goats (Bowen 1975a, 1975b, 1976, 1986). Rural assemblages showed the predominant age group for cattle to have been the two- and three-year-olds, while several late eighteenth- and early nineteenth-century urban assemblages from Newport, Boston, and Salem consistently showed 85% of the cattle remains to have been less than eighteen months (Bowen 1994). Distribution of skeletal parts in the urban assemblages were also distinctly different. In rural assemblages generally all parts of the skeleton were represented, while urban assemblages, regardless of the status or ethnic affiliation of the household, showed the head and foot bones for adult cattle and sheep/goats to be virtually absent. This data base was small, yet the differences were so striking that it was impossible to overlook them.

Zooarchaeologists, notably analysts working with European and Near Eastern faunal assemblages, have made important contributions to the study of complex societies, showing how urban process affects the production, distribution, and availability of foods in urban communities (Zeder 1988; 1991; Crabtree 1990). Drawing on age date, relative dietary estimates, and element distributions, they have found that when urban households depend upon a market system for their food supply, the choice of types and cuts of meat is constrained by the procurement system. In small-scale procurement systems where the consumer has direct ties to the producer, a wide variety of animals are available, so the range of animals found in rural and urban faunal assemblages are similar. But in large-scale economies where markets are the primary source of food, households tend to have a narrower range of animals from which to choose. Assemblages from these urban sites, therefore, show less diversity.

In small-scale economies farmers rely upon unspecialized husbandry methods to raise livestock primarily for their own consumption. The ages of animals found in these urban assemblages, therefore, resemble those found in rural sites. Governments maintain few regulations restricting locations where the slaughtering, butchering, selling, and disposal of waste parts take place, so urban residents—including butchers—can slaughter livestock near their homes. Assemblages excavated from these sites, consequently, show striking similarities with assemblages from rural sites. In general, the proportions of bone elements are similar to those found in the complete skeleton.

In large-scale economies all phases of the production and distribution of foods become specialized. Farmers adopt specialized husbandry methods to raise livestock specifically to supply the market. They tend to sell younger animals, keeping a more diverse age group for their own consumption. Age profiles for rural herds, therefore, differ from those for animals sent to market. In these specialized provisioning systems governments tend to restrict locations where animals can be slaughtered and even regulate what part of the animals can be sold. Thus, assemblages from highly urbanized market systems show an irregular distribution of body parts, with a disproportionate percentage of meaty bones and a low number of bones associated with butchering waste.

Thus, the intensive and regulated flow of produce from rural areas to urban kitchens found in large-scale systems should leave its distinctive mark on urban faunal assemblages in the form of the diversity of animals, slaughter patterns, and skeletal parts. By showing the range of animals found in rural and urban assemblages, it should be possible to make some generalizations on the effect urbanization had on the availability of animals in urban centers. By showing which age groups are present in rural sites and which ones are found in urban sites, it should be possible to make statements concerning the production of livestock. By comparing the presence/absence of skeletal parts in rural and urban assemblages, it should be possible to demonstrate that certain skeletal parts of the carcass were disposed of, as well as to show which parts were made available to households. From there it is possible to infer the extent to which municipal regulations controlled the distribution of foods.

Using this approach we will examine Boston's provisioning system as it emerged in the context of countryside, as its population grew and farmers responded to the rapidly increasing market for their produce. From the faunal remains, we will be able to identify when and how the region's provisioning system evolved into a highly specialized market system that fed large numbers of urban residents (Bourdillon 1980; Zeder 1991; Crabtree 1990; Maltby 1979, 1985; Landon 1991; Bowen 1994). Once the basic outlines of Boston's provisioning system has been identified, then it will be possible to make statements about how it affected the availability of foods and assess dietary variability for households of different ethnic affiliations and varying social and economic rank.

Boston's Provisioning System

As an urban center, Boston diverged from its rural roots and developed its own environment and its own system of providing its residents with food (Bourdillon 1982:181). Early on, Boston developed a market-oriented system of food distribution. This was mostly due to explosive population growth, as shown in Table 4.

Table 4.
Boston's Population Growth

Year	Population (Residents)	Year	Population (Residents)
1640	1,200	1710	9,000
1650	2,000	1743	16,382
1660	3,000	1760	15,381
1680	4,500	1790	18,038
1690	7,000		

Source: Landon (1991:63)

Throughout the colonial years, residents could produce at least a portion of their own food supplies by raising a pig or keeping cattle and sheep on the commons and nearby islands, but they lived in a fundamentally urban commercial center. Friedman (1973:191-192) has convincingly demonstrated the fact that even by 1640, a decade after settlement, Boston's 1,200 residents had outgrown their food resources. Many residents may have raised a pig or kept a cow, but few could have raised enough livestock to supply all their meat, and many would have acquired most (perhaps all) from butchers, merchants, and local farmers who sold meat from carts. Thus, the rural production and procurement of many foods became quickly and irrevocably intertwined with the urban system of food production and distribution.

The extent to which artisans, tenants, and other occupants living at the Paddy's Alley, Cross Street, and Mill Pond sites kept livestock has not been determined. Some may very well have kept a pig or cow, since residents were permitted to keep livestock throughout the eighteenth century (Friedman 1973; Marten 1980). Even in 1737, when Boston was experiencing a rapid growth in population, town councilmen encouraged the keeping of livestock raising by permitting families to raise hog, allowing them to keep one or more cows on the town commons, or either sheep or cattle on nearby islands. Depending upon a resident's personal resources, they may have produced a substantial portion of their own meat. As Boston grew larger, however, and its population put more and more pressure on land used for grazing, it became more difficult for families to keep livestock. Billy G. Smith suggests that laboring families in late eighteenth-century Philadelphia could, in hard times, produce their own food, although the crowded alleys where most lived made gardening impractical, and the possession of a cow even less feasible (Smith 1980:174). Even if the site's occupants did keep some livestock, they probably provided little more than a supplement to commercially produced foods.

Over the years it became more and more difficult to raise livestock. They were to be kept off streets and confined in narrow pens and yards. Laws required swine and goats to be licensed, and they restricted the number and kind of livestock allowed on the commons. By 1801 the town bull and dairy cows were the only livestock regularly allowed on the commons. Otherwise, only horses, oxen, steers, heifers, goats, sheep, calves, and swine which were on their way to market and under the care of someone were permitted pasturage. By 1827, the restrictions had increased and only one cow per person was allowed. In 1833 an act repealed all rights to pasturage on the common, signaling the end of livestock-rearing in Boston. By 1840, when the agricultural census was taken, livestock were found only in the more rural areas (Marten 1980:18-21).

Producing meat in Boston's urban environment was distinctly different from producing meat in rural communities. In the hinterland land was more readily available and the individual had more direct input into determining when and how the land would be used. In most towns, just as in the cities, some land was set aside as common pasturage until sometime during the eighteenth century. There were less restrictive controls on which animals could be pastured. On additional lands, farmers pastured their animals, and they also rented or exchanged pasturage for labor, goods, and services to kinsmen and neighbors in need of pasturage (Bowen 1990a).

Another difference between urban and rural areas concerned the slaughter and butchering of carcasses. In rural areas, restrictions were few, sometimes non-existent. Drawing upon friends, neighbors, and kinsmen to help, farmers slaughtered livestock right on the farm, paying in kind or exchanging labor for meat, goods, and services among themselves. Here, on the farm, the entire carcass was available for consumption. In Boston, however, residents had to rely on the urban distribution system. From as early as the mid-seventeenth century, the city restricted locations where slaughtering could take place, and by the mid-eighteenth century no slaughtering was allowed in town (Marten 1980:12; Smith and Bridges 1982:198).

Although there is no direct evidence for how individual Boston residents might have butchered their own livestock, we can infer from historical records that they might have taken their animals to a local butcher. Butcher's accounts from Medway, Massachusetts and Middletown, Connecticut, if fact, show that in these two towns individuals could sell their animal to a butcher, who would give them credit towards purchases of small amounts of meat throughout the year (Bowen 1986). As long as butcher's were allowed to operate in town, this possibility existed. Throughout the seventeenth century it is clear butchers' activities were located in town. In 1647, the selectmen warned Robert Nash not to kill beasts in the street. Even later in 1693 selectmen forbade killing "small meat"—calves, sheep, and the like—in butcher's shops because of rancid blood that pooled in Boston's streets (Lewis 1984:167). Lewis shows that at least until the 1730s butchers continued to work out of their own shops, circumventing the town's attempt to regulate their activities. Thus, even though the raising of livestock was one way an urban dweller could supply his family with meat, the husbandry and slaughter of these animals was intimately tied in with the urban economy.

As early as the mid-seventeenth century farmers brought their agricultural surplus to town to sell. Until well into the eighteenth century, the market system that developed around this flow of foods, animals, and animal products can best be described as face-to-face. Adamant in their opposition to middlemen and a centralized market, the town protected the farmers—the producers—who sold meat and animal products directly to the consumer (Marten 1980:1-2; Friedman 1973; Lewis 1984). They drove their carts or sleds into town, where they either parked in the streets crying out their wares or went door to door with them.

By the 1730s, during a period when Boston's population was growing substantially, a move to centralize the sale of farm produce began. Several public markets were created—one near the town dock, a second by the North Meeting House and a third at the south end of town. Dissenting mobs, however, tore down the Dock Square market building in 1734. Later in 1740 a neighbor Peter Faneuil built another market building, which was completed and turned over to the town in 1742. There, the city provided producers a central place for business. No butchers or other middlemen were allowed to sell what they had purchased from the producer (Marten 1980:3).

By the eighteenth century, several sources of food were available to residents (Marten 1980). Most important were the centralized markets, which had become a well established feature of Boston. Open daily in several locations throughout the city, farmers and other vendors sold their produce to consumers. So popular a place were the markets that city regulations continually tried to keep middlemen from doing business there. A second source was farmers selling their produce from carts. Wagons, stalls, and benches loaded with meat, vegetables, and other articles of provision were located throughout the town.

Another source of food was retail shops, including provision dealers, West India stores, and grocers who purchased meat and animal products from producers and importers to sell to consumers (Marten 1980:13). The provisioners, or provision dealers, which were located in market houses as well as individual shops throughout the city, sold a wide variety of goods and produce: fresh and salted meat, salt fish, eggs, imported foods, dry goods, and hardware. West India goods dealers and grocers, who were also located throughout the city, these goods along with imported wares (Marten 1980:13-17).

As the eighteenth century progressed, it appears animals not produced in New England became an increasingly important source of food for Boston residents. Lewis (1984) demonstrates that the British military ventures, which began in the 1740s and continued on through the 1760s, played a major role in shifting Boston's supply source away from local producers. Entrepreneurs, known as "forestallers," bought cheap land in outlying towns such as Roxbury and established relatively large-scale slaughtering operations. They were able to offer farmers higher prices than Boston's butchers, then sell most of the meat at a good profit to military provisioners. By doing so, they created a severe shortage of meat in Boston beginning in the 1740s and continuing through much of the century.

Until then Bostonians ate meat killed in Boston, and marketed from either private shops, the central market, or carts (Lewis 1984:177). But Boston's population, which was growing rapidly at this time, required increasing quantities of provisions themselves. Merchants responded to this market first by combing the countryside for supplies, then by importing provisions from the southern colonies. These came from South Carolina in particular, where cattle and pigs could be produced more cheaply than in New England. By the 1750s and particularly by the 1760s Boston had become heavily dependent upon meat imported in this coastal trade (Lewis 1984:114).

To help control matters, town selectmen attempted to protect the ability of local producers to sell directly in town. In 1742 a law restrained butchers from buying meat in town to sell again, and offenders were barred from doing business in the markets. Most butchers, consequently, moved their operations to nearby locations outside of town (one being the Brighton livestock market). Throughout the eighteenth century local merchants continued to pick up local surplusses of cattle and drive them to market, and larger merchants continued to ship small amounts of cattle from Connecticut and Rhode Island to Boston, but these operations were limited in scope. Gradually imported meats became increasingly important, at least according to Lewis (1984).

There can be no doubt that being part of this large urban community had far-reaching effects on residents and their diets. From the seventeenth century on, the town functioned as an international trade and shipping center. Agricultural produce came from New England farmers, and a wide range of imported goods came from other colonies and countries. Boston itself became a transit point for travelers and a center for provisioning ships and the military (Lewis 1984; Friedman 1973:189-201). With these additional demands for local agricultural produce and the subsequent substitution of imported foods, there must have been a wide range of foods to choose from. In addition, the international character of the city's commerce, the availability of imported foods, and the presence of a large transient population must have brought a cosmopolitan character to the city.

There are early signs that Boston's provisioning system was becoming increasingly commercialized. By 1642 butchers were asked to remove their activities to remote locations, and by 1656 all butchers were required to throw their waste products in the millcreek where water would carry them away. By 1692 Boston, Salem, and Charlestown restricted slaughterhouses to designated areas. Not surprisingly, Boston located three areas near water (Friedman 1973:195-196). Despite these regulations, however, many butchers were located in Boston until the 1730s. High taxes and increasingly restrictive regulations forced them to leave, and by 1746 the number of butchers in Boston declined from thirty to four or five (Friedman 1973:196). From that time, all meat sold in Boston was butchered elsewhere, and by 1789 not a single butcher was listed (Marten 1980). Additional signs of the increasing centralization of food redistribution include the opening of Faneuil Hall in 1742 and regulations beginning in 1800 restricting peddlers, who could no longer work the streets or sell from parked carts.

Now more than ever markets became the focal point for urban shoppers (Marten 1980).

Perhaps not coincidentally, these changes occurred during a period when Boston's population was rapidly expanding. Markets were built to house the producer, but middlemen increasingly took on more and more of the purchasing, slaughtering, butchering, and sale of livestock. More regulations followed establishing the control of their activities. This process, which began with limiting the slaughter of livestock to the outskirts of town in the seventeenth century continued throughout the eighteenth and nineteenth centuries. By the post-Revolutionary period the market had grown, with increasingly restrictive regulations aimed at controlling traffic and disease. The 1742 law restraining butchers from buying meat in town to sell again was "repeated in a law of 1801 prohibiting butchers from buying goods that were being brought to town for sale and then reselling them" (Marten 1980:13). Obviously, butchers were still reselling meat.

But the combination of military provisioning, urban growth, and the entrepreneurship of forestallers altered the traditional food supply system. Lewis (1984:99) writes that the intense demand for cattle brought about the collapse of this sector of the urban economy. Boston's selectmen, meeting in May 1746, discussed the problem:

> *..for some years past there has been a new method of Supplying the Town of Boston with Flesh of every kind, this heretofore was principally done by Butchers who dwelt in this Town & killed amost all the meat this people had both large and small but especially all large meat almost without a Single Exception (Boston Registry Department 1881-1909: 14:99).*

The selectmen were referring to the century-old practice of driving cattle to town, where they waited on the Common for purchase by local butchers. But forestallers had bankrupted Boston's butchers, gradually making them leave town. Instead, farmers sold their livestock to butchers who worked for the entrepreneurial forestallers, shifting the butchery business to the countryside and removing marketing from the hands of the rural producer.

As the population grew and lands available for pasturing diminished, the urban community of Boston rapidly became dependent upon external resources for basic foods. But to what extent, and how were these new demands met? Historians generally have looked to the increased production of livestock in New England's rural countryside (Garrison 1987; Russell 1976; Baker and Izard 1991). Alone among the New England historians, Lewis (1984:257-291) makes a strong case for the essential importance of external meat supplies, claiming that by the 1760s Bostonians depended upon coastal merchants and trade more than ever before for meat (particularly pork, but also beef).

It is clear that as urban populations grew the demand for external meats increased, but to what extent imported provisions took the place of those produced in the countryside is not at all well understood. Lewis investigates the transformation of the cattle trade in order to understand the developments in the tanning and shoemaking trades, but this focus may have the effect of over-emphasizing the importance imported meats in the urban market. It is hoped that faunal data can help to produce a better understanding.

Regardless of the introduction of imported meats, it is clear that New England farmers took advantage of the new market. At what point did farmers drop traditional husbandry methods in favor of more efficient commercially-oriented methods? Was the shift towards commercial production unilateral, in the sense that farmers began at the same time to raise cattle, swine, and sheep specifically for sale rather than home consumption? Or, did increased demand for one type of livestock and its products precede an increased demand for others? If so, then we should expect the commercial production of livestock to be focused on specific livestock, rather than on all types of livestock. Did the increased centralization of food redistribution have any affect on the availability of fish to urban consumers?

The Availability of Fish in Boston

From the early years of settlement in New England, large numbers of fish were harvested. At first fisherman confined themselves to working the waters close inshore. Weirs were used to seal off schools of herring in the coves, and along the riverbanks fishermen caught sturgeon, salmon, and alewives. Others worked a few miles off the coast in small shallows for cod, haddock, and pollock (Albion et al. 1972:26-27). By the mid-seventeenth century, however, fishermen ventured further out. Fishing was done mainly with handlines from decks of vessels, and fishermen were paid by the number of fish they caught.

Until urban populations increased to the point that quantities of fresh fish could be purchased quickly, or ice could be used on a large commercial basis, the early New England fisheries were aimed at the export market (Oliver 1994). Thus before the first half of the nineteenth century, when fisheries began to use ice on a large scale and vessel construction techniques were producing more sea-worthy boats, only a small percentage of fish sold in Boston seems to have been brought in fresh. Without salt or some other preservative, fish flesh will deteriorate rapidly, even within twenty minutes if not put on ice. Depending on the species and their market, fish were either salted, smoked, or pickled in brine. Salt cod, with its highly-quality white flesh, could be kept for months without spoiling (Jensen 1972:5; Burgess et al. 1967).

Despite the apparent preponderance of preserved fish, however, city regulations clearly show fresh fish was also available from the late eighteenth century on. In 1799 the Board of Health passed regulations aimed at controlling the disposal of things deemed unhealthful. Dealers in live fish, salmon, eels, and small fish were required to place the refuse into a tight box immediately after sale and remove it from town. All other fish were to be gutted and cleaned before being brought within the channel and salted within eighteen hours (Blake 1959:167-168).

Most references describing the types of fish sold in Boston date from the early nineteenth century, but despite the rather late date, they do give a sense of the variety available in local waters. Fish recorded for sale from 1826 to 1834 include salmon, shad, bass, mackerel, eel, flounder, and smelt. From 1836 to 1850 menus from various eating establishments in Boston show that cod, halibut, eels, salmon, smelt, tautog, herring, mackerel, trout, sole, sardines, and perch were all available in the Boston area (Wetmore 1827, 1834).

Lydia Child's advice on how to select and prepare fish in *The Frugal Housewife*, the earliest cook book of its kind and considered by many to be the most representative cookbook for the middle class in New England, suggests that there was fresh fish available in the Boston market. Along with advice on how to differentiate between a cod and haddock, and how each may be best prepared, she tells readers how to make sure mackerel are fresh, and how to keep them fresh as long as possible after purchase (Child 1833:57-60).

Fish recovered from the Paddy's Alley, Cross Street Back Lot, and Mill Pond sites, excepting the shark and sturgeon, are all among those listed as being available in the Boston markets. Further, evidence is strong to suggest these fish were fresh and not salted. Haddock remains included elements from the entire skeleton, the first clue that they were consumed fresh, as heads were almost always otherwise removed. The reason why this is is suggested by historical documentation gathered by Sandra Oliver (1994): haddock was not suitable for salting. While it is smoked today, New Englanders did not smoke haddock, or any other fish for that matter, until late in the nineteenth century when technology had improved and market demands forced them to.

Bones from the Atlantic cod, the most commonly preserved fish, were found relatively frequently in the Paddy's Alley/Cross Street/Mill Pond assemblages. Present in these assemblages are elements from the entire skeleton, a pattern that suggests they were purchased fresh since salt cod was, as today, filleted. On board the fishing vessel during the salting process, heads were removed and either thrown away or used as bait. With cod especially, the presence of whole fish indicates the fish were fresh when sold (Oliver 1994).

Striped bass, another fish identified from the Paddy's Alley/Cross Street/Mill Pond faunal remains, was also probably purchased fresh. Considered in colonial New England to be a good sports fish, as it is today, this fish was probably caught individually and not by a commercial fishery. It was considered a good chowder fish (Oliver 1994).

Also present in one of the earliest assemblages, Feature 4, are the remains of the Family Clupeidae, including the Atlantic herring and alewives. Since the sea herring spawns at sea rather than in fresh water, like the other members of this family, the northern fisheries sought after them. Plentiful and easy to salt, herring became an important item in the export trade that fed large numbers of slaves in the West Indies.

It is tempting to suggest that the herring appearing in the early Feature 4 assemblages were salted, but large schools of herring frequented the coast from Block Island to Labrador in the summer and fall, and it is quite possible that they were fresh (Oliver 1995:379-380).

Overall, the presence of fish in the Paddy's Alley/Cross Street/Mill Pond assemblages was exceptionally small in relation to either bird or mammal remains. In only a few assemblages did fish make up any significant portion of the biomass, containing generally less than 1% of the total biomass, although several assemblages contain as much as 2%, and in the case of one very small assemblage 21%.

The varying percentages of fish in the post-1720 Paddy's Alley/Cross Street/Mill Pond assemblages (Table 5) are, at least in part, the result of sample size and natural variation. Overall, it is apparent that the earliest assemblages contain the greatest variety of species, most notably the shark, Atlantic herring, and alewife. But consistently present in all, or most, assemblages of all sizes and from all time periods are the cod, haddock, and striped bass. Most often this pattern found in urban faunal remains is explained through availability. In small urban communities fish are available in local waters, but when populations surge, the environment is impacted to the point that availability decreases and urban residents can no longer fish for themselves, and thus the decreased richness in the diet (Rothschild 1990). This might well be part of the explanation, but as Rothschild so ably points out, commercial fisheries play a major part in availability. As she showed for New York City, developments in the New England fisheries may very well play a major part in the amount and types of fish consumed by Boston residents.

According to Oliver (personal communication, 1994), the 1730s was a time for growth in the fish business. Boston's growing population increased demand, and with the emergence of a reliable market for highly perishable fresh fish, more individuals could have fished to make a living. Typically, fisherman were typically relatively poor; since it took little capital to enter the market, at least on a small scale, many began to fish commercially. Another possible source of this fish could be well vessels, which commercial fisheries began to be used by entrepreneurs for the New York market by the 1740s. Built to house live fish until they could be carried to market, these vessels were water-tight but had holes for sea water to enter the hold and circulate. There they dumped freshly caught fish, with swim bladders punctured to prevent them from floating, until they reached shore.

Before any interpretation of fish consumption is offered, more work on New England fisheries is needed. However, it must be noted that despite the frustratingly small sample sizes, it is clear fish took a far back seat to the meat of mammals. There can be no doubt we are seeing a cultural preference as much as archaeological bias, particularly given the very excellent preservation at this site. Culturally speaking, fish were never particularly sought after, nor even thought desirable by the English (Oliver 1994; Wilson 1974). Given the choice, mammal flesh seems to have been the preferred.

Table 5.
Fish Consumption
(Expressed as Percentage of Total Biomass)

	Shark	Unid Bony Fish	Sturgeon	Family Clupeidae	Alewife	Herring	Family Gadidae	Cod	Haddock	Striped Bass	Total	NISP
Late 17th c.-1720:												
CSB Phase I F4	<0.1	<0.1		0.2	<0.1	<0.1	0.1	0.4	0.4	<0.1	1.6	1618
CSB Phase I-2 F4	<0.1	<0.1		0.6	0.1	0.1		1.9			2.9	434
CSB Phase I-3 F4		1.9		1.7		3.4		6.6	0.8		21.6	38
CSB Phase I-5 F4		0.1		0.1	<0.1		<0.1	0.5	0.2		1.1	559
CSB Phase I-7 F4		0.1									0.1	47
CSB Phase I-8 F4		0.1		<0.1					0.8	0.1	1.1	194
CSB Phase I-10 F4		0.3					0.2		0.2		0.7	346
CSB Phase II F4		0.3					0.4	0.3	0.8	<0.1	1.9	2195
CSB Phase II-1 F4		0.3					0.5	0.4	1.1	<0.1	2.4	1248
CSB Phase II-2 F4		0.2					0.2	0.2	0.4		1.0	587
CSB Phase II-3 F4		0.8					0.5	0.1	2.2		3.6	360
PA Phase I		0.1					0.1				0.2	398
PA Phase I-W		0.1									0.1	248
PA Phase I-E		0.1					0.1				0.2	150
PA Phase II		0.1					0.1				0.2	752
PA Phase III	<0.1	0.2					0.1	<0.1	0.2		0.7	2574
PA Phase III-W		0.6					0.1	0.1	0.6		1.4	582
PA Phase III-E	<0.1	0.1					<0.1		0.1		0.4	1992
MP Phase I		0.1						0.2			0.3	776
CSB Phase I		0.1									0.1	298
CSB Phase II		<0.1							0.1		0.2	354
1720-1740:												
PA Phase IV-E		0.1					<0.1		0.4	<0.1	0.7	2814
PA Phase IV-W		0.5					0.6	0.3	0.9		2.3	827

Table 5.
Fish Consumption
(Expressed as Percentage of Total Biomass)

	Shark	Unid Bony Fish	Sturgeon	Family Clupeidae	Alewife	Herring	Family Gadidae	Cod	Haddock	Striped Bass	Total	NISP
PA Phase IV-1-E		0.1									0.1	222
PA Phase IV-2								1.7	0.3		2.0	64
PA Phase IV-3-W		0.5	0.3				0.1	0.3	0.5		1.7	1902
PA Phase IV-3-E		0.1					0.1		0.4	<0.1	0.7	2592
PA Phase V		0.1					0.1				0.2	186
CSB Phase III		0.2					0.2	0.1	0.1		0.6	1101
1760-1810:												
PA Phase VII		0.3					0.2				0.5	691
PA Phase VII-W		1.9									1.9	13
PA Phase VII-E		0.2					0.2				0.4	678
CSB Phase V		0.5					0.3	0.3	0.2		1.3	513
MP Phase III												145
MP Phase IIIa		0.2						<0.1	0.1		0.4	1448
MP Phase IV								0.1			0.1	396
MP Phase V		0.1							0.1		0.2	1168

Note: PA=Paddy's Alley; CSB=Cross Street Back Lot; MP=Mill Pond.

In addition, fish has been historically largely a food of the poor (Oliver 1994). Thus, with the eventual careful correlation of households with these assemblages, it might be possible to suggest a status- or wealth-related consumption pattern.

Animal Husbandry and the Production of Meat for an Urban Center

In animal husbandry there is a direct relationship between the agricultural economy and how livestock are bred, raised, and slaughtered. In subsistence farming, animal husbandry focuses on raising livestock to serve multiple purposes. Cattle, for example, are raised for milk, meat, and draft uses; sheep are raised for wool and meat. In this subsistence-oriented economy, farmers tend to raise livestock to provide their household's needs, and only after their needs are met is any surplus sold. While we tend to think of this type of agriculture as producing only a minimal level of subsistence, some farmers in this system make healthy profits. Those who make these profits do so by purchasing older animals from small farmers as they cull their herds at the end of the summer (Ritchie 1987). For example, these wealthier farmers purchase these cattle, fatten them over winter, then send them to market the following spring. While these farmers clearly want to make a profit, they still function within an agricultural system that depends upon multiple-use livestock, rather than one which has developed a specialized, commercialized form of husbandry that raises breeds developed for the purpose of producing one primary product.

The other extreme in agriculture is this much more specialized, commercially oriented type of husbandry such as we know today. Unlike subsistence farmers whose basic intent is to provide for their family's needs, the intent of raising livestock in commercial agriculture is to produce a product for market. On these specialized farms, subsistence farming is secondary, and the focus is put on carefully managing livestock to produce the greatest profit. Since this is best accomplished by focusing on a single product from an animal, commercially oriented farming has developed very specialized farms with livestock bred to produce that product: dairy cows to produce milk, beef cattle to produce meat.

A region's transformation from a subsistence-oriented economy to a commercially-oriented economy capable of supplying the demands of a large urban population is a complex process. In subsistence-oriented economies responding to an increasing urban demand for animals and animal products, the very existence of urban centers exerts pressure on the agricultural base of the economy. In various ways animal husbandry is affected. Incentives to raise greater numbers more efficiently bring farmers to intensify husbandry methods, improving the nutrition of cattle, introducing better stock, even killing off more young animals for meat.

Esther Boserup wrote in 1965 that agricultural systems tend to "remain at a particular level of intensity for as long as possible but that in time an increasing population will make the system uneconomic until eventually the community is forced to intensify the system" (Boserup 1965 in Maltby 1979:87). When increased demands outdistance the system's ability to produce, then, and only then, will there be any significant improvement in stock management better able to handle increased quantities of animals and animal products.

The emergence of urban centers in New England during the early eighteenth century, therefore, may have encouraged the intensification of some traditional husbandries, while others produced sufficient surpluses that intensified, commercial techniques were not adopted. Thus, our investigation of the development of urban distribution system from a small-scale system to a fully developed large-scale system will examine each type of livestock, even specific products independently of one another. We will, for example, closely examine the possibility that the increased production of milk and dairy products occurred at a very early period, while the production of beef for the urban market could be accomplished by intensifying traditional husbandry methods.

It is believed that the first half of the nineteenth century saw the development of agriculture in New England from a subsistence base to an ever-increasing commercially oriented agriculture (Bidwell and Falconer 1925; Russell 1976; Baker and Izard 1991; Garrison 1987; Schlebecker 1976; Schumacher 1975; Danhof 1969). In some regions smaller farms were still functioning in the traditional manner, but an increasing number began to specialize in the production of one primary product. The study of the Paddy's Alley/Cross Street/Mill Pond faunal remains, particularly since they span the entire eighteenth century, provides some interesting insights on the development of this specialized, commercially oriented agriculture in the region. It also, by extension, provides some of the best data now in existence showing when some forms of specialized husbandry were adopted in New England.

Kill-off data will be presented in this section. To assist in the interpretation of Paddy's Alley/Cross Street Back Lot/Mill Pond husbandry data, similar data drawn from the faunal analyses from several other archaeological sites will be included. Those chosen for comparison include a rural site, the Mott Farm, from which came a tightly dated assemblage from the 1740s, and two urban sites dating to the late eighteenth and early nineteenth centuries, the African Meeting House in Boston and the Narbonne House in Salem, Massachusetts.

Several assemblages fell into general time periods that could be instructive. By observing how the proportions of age groups change over time, it is possible to observe the introduction of specialized husbandry. Since the numbers of ageable long bones varied considerably among the different assemblages, and large numbers of ageable long bones are required, all of the very small assemblages were eliminated from consideration. Other assemblages were marginal, but in hopes of obtaining data from as many time periods as possible, we considered all assemblages having more than 20 ageable long bones. It must be understood data from the smaller assemblages are problematical, particularly when taken by themselves. However, if they are considered along with data from the larger assemblages husbandry data seen in them can potentially be useful. Data for these charts are included in Appendix F.

To help create large assemblages that are more statistically reliable, those from closely-related time periods were combined. Together with the separate assemblages, both large and small, the age data tells some interesting stories.

CATTLE HUSBANDRY

Modern commercialized husbandry follows relatively clear cut rules. If cattle are being raised for the primary purpose of dairying, the kill-off pattern produced will be a group of very young calves and another group of older adults. The first group is comprised principally of young bull calves, which do not serve any useful purpose. They are quickly weaned, fattened on grass and grain, then slaughtered to be sold on the veal market. Only those males intended for use as breeding bulls or oxen are raised to maturity.

The second group is made up of the older dairy cows. Dairy cows are raised for their milk productivity and ability to produce strong calves. If a cow produces strong, healthy calves who mature as good milk producers, she will be kept in the herd even if her milk productivity has slacked off. But, if her calves are not particularly productive dairy cows, she probably will be fattened and sent to the slaughter house. A modern productive cow might be kept as part of the milking herd for as long as 12 years.

If cattle are raised for beef, on the other hand, the kill-off pattern is very different. Aimed at the most economical and efficient raising of cattle from the time of their birth to when they reach their optimal weight, beef husbandry focuses on rapid growth and fattening (Bundy, Diggins, and Christensen 1982; Blakely and Bade 1985). Most commonly, calves are born in the spring, raised on grass and grain, are either kept and fattened during the winter or are sold as "feeders" to farmers with sufficient grain resources. In the following spring they are again put on pasture lands, and during the second fall put into feedlots, finished, and sent off to the slaughter house. Normally these cows are slaughtered between 18 and 24 months. In contrast to dairying, few calves are slaughtered. Bull calves are generally castrated and raised to be sold as steers. Cows, unless they are kept as breeders, are raised in the same manner and slaughtered at about the same age.

Because both dairy and beef cattle eventually wind up at the slaughterhouse, an urban kill-off pattern should reflect a combination of both husbandry schemes. In them should be a fair number of young veal calves, young individuals 1½ to 2 years old slaughtered as beef, and along with a group of dairy cows, breeders of beef or dairy cows, oxen, and bulls that had outlived their usefulness.

In the following section we will discuss kill-off patterns obtained by combining several assemblages or sub-assemblages from similar time periods. This method, which partially masks a certain amount of household-level variation, is nonetheless very instructive for discovering large-scale trends in the area's husbandry system.

1700-1720

Five assemblages (PA Phases I-III, PA Phase III, PA Phase III-E, CSB Phase II, and PA Phases I-III/CSB Phases I-II) were included in this group (Fig. 1a-e). In general, some kill-off patterns contain a greater percentage of young and others a greater percentage of older individuals, but taken as a whole they are distinctly different from cattle kill-off patterns obtained from late eighteenth- and early nineteenth-century urban archaeological sites throughout New England. They are consistent with what zooarchaeologists claim are non-specialized, subsistence-oriented economies, a slaughter pattern including a wide range of ages, rather than a predominance of young cattle in their prime. Proportionately, the youngest group in the population make up from 20 to 40% of the total, with the lower percentages coming from the earliest assemblage producing enough ageable long bones.

The Cross Street Phase II assemblages (ca. 1716) provide an early view of provisioning in Boston, a view that supports the Near Eastern zooarchaeological theories on provisioning in complex societies, for they show the smallest number of young and largest number of older individuals. By comparing the age data from these assemblages dating to this early period with the rural Mott Farm cattle data (Fig. 2e), it becomes possible to see very early development when some farmers were beginning to produce milk for the urban market, for here at 1700, there is still substantially more young present than in a rural assemblage.

1720-1740

Cattle kill-off patterns from Paddy's Alley Phases IV, V, and VI (Figs. 1f and 2a) show that by the second and third decades of the eighteenth century the proportion of the youngest group, grew to 52%, the middle groups dropped proportionately, and the oldest age group dropped to 31%.

Two assemblages dating to the 1730s show that in one decade more young calves and sub-adults were sold in Boston. Paddy's Alley IV-3-E and Paddy's Alley IV-3-W (Fig. 2b-c) show this group made up, respectively, 61% and 60% of the total.

The combined Paddy's Alley Phases V and VI and Cross Street Phase III pattern (Fig. 2d) indicates the steady growth of commercialized husbandry, with 80% of the ageable bones falling into the youngest age group. Here, as early as the second quarter of the eighteenth century, is evidence of husbandry that is identical to cattle kill-off

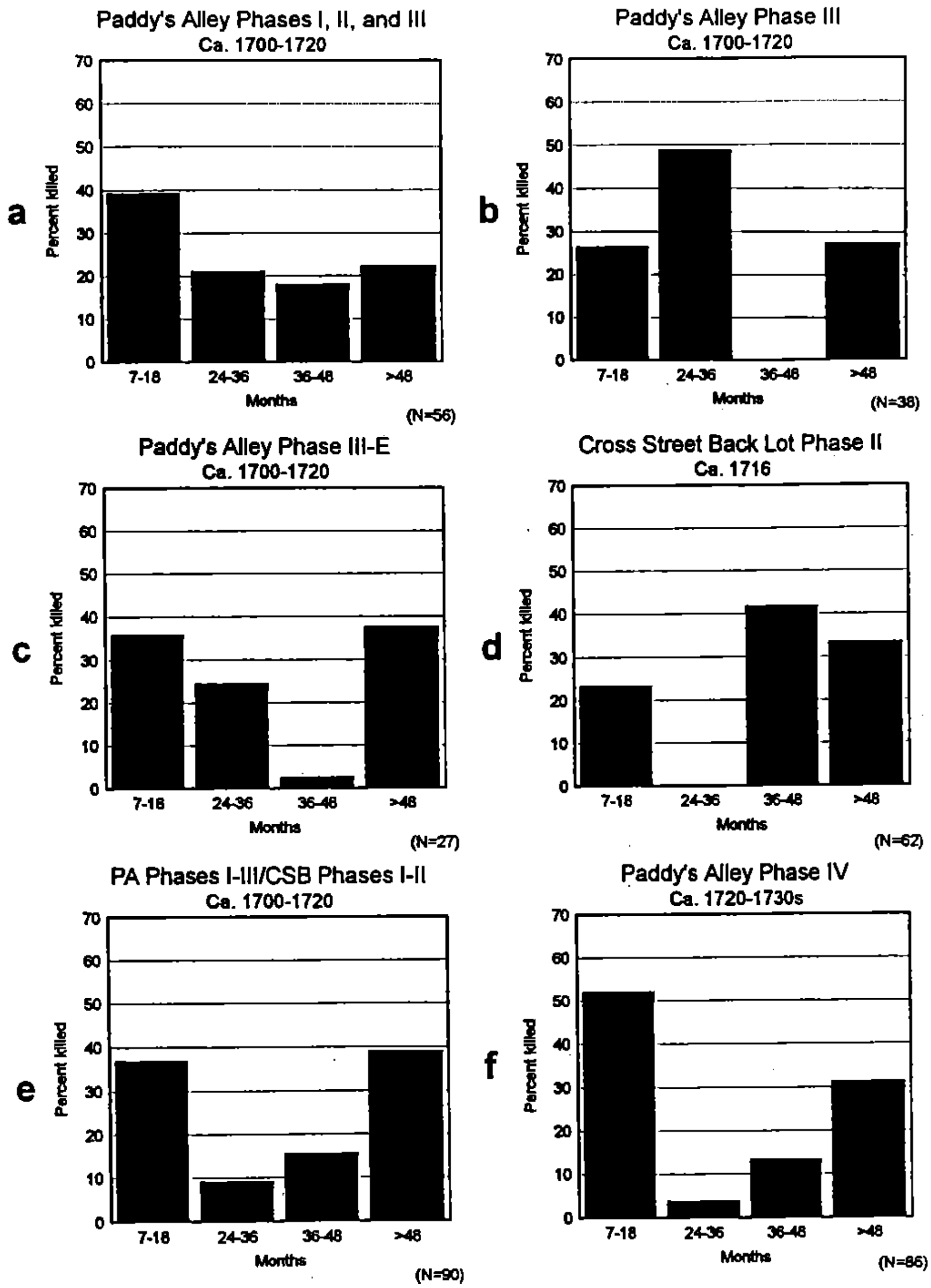


Figure 1. Cattle Kill-off Patterns: 1700-1720.

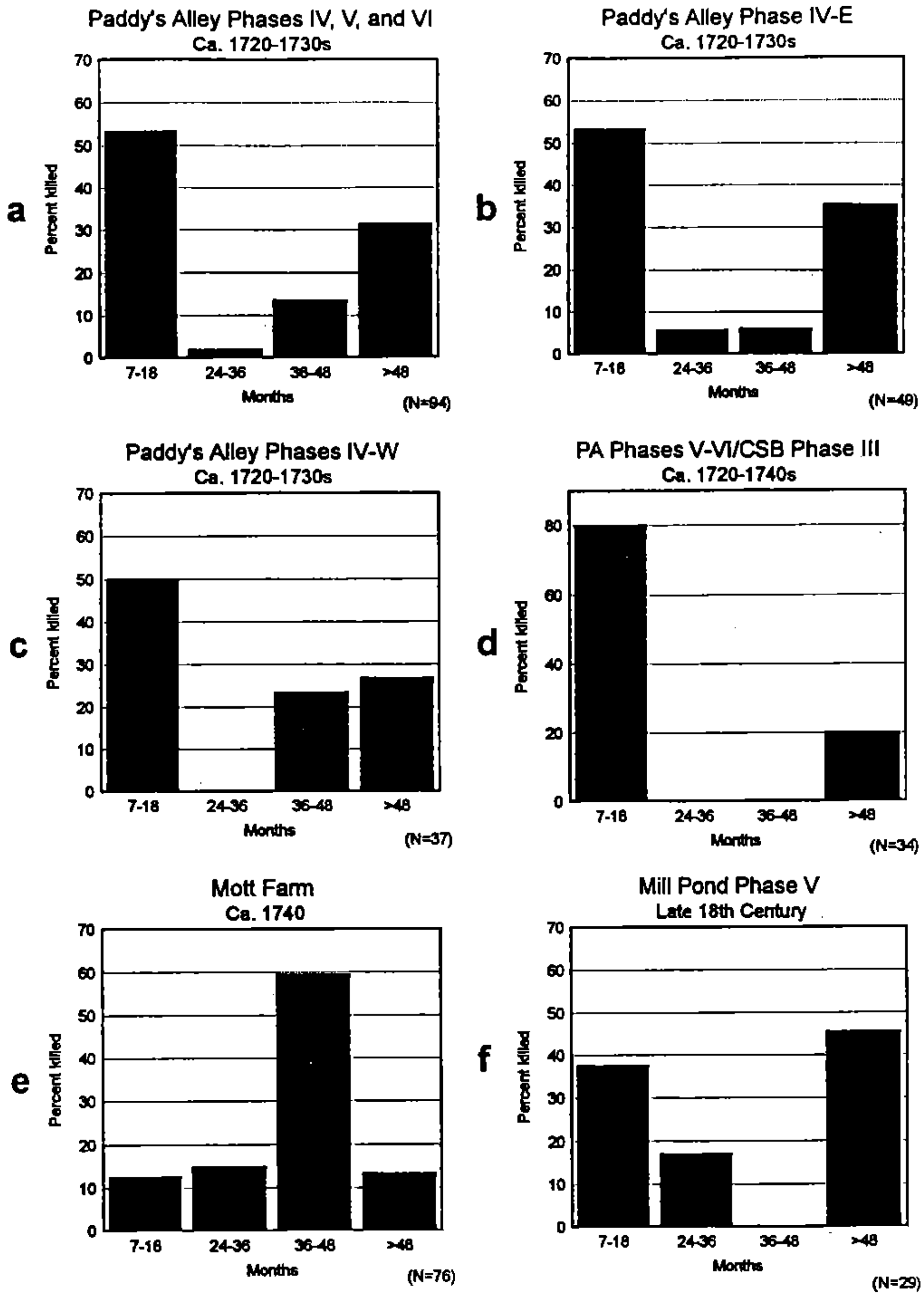


Figure 2. Cattle Kill-off Patterns: 1720-1740.

patterns produced from late eighteenth and early nineteenth century sites, including the African Meeting House in Boston and the Narbonne House in Salem (Bowen 1994:159).

1760-1810

Among all the assemblages analyzed from the three sites, only one produced even marginally sufficient numbers of ageable long bones to produce cattle kill-off patterns dating to the 1760s. Mill Pond Phase V, dated at ca. 1769, produced only 29 long bones having epiphysis. Although this number can be hardly considered a statistically sound data base, it does show the same predominance of the youngest and oldest age groups (Fig. 3b).

Kill-off patterns from later periods were equally problematic. Since Mill Pond Phases III and IIIa were so closely dated, cattle data from both were combined together (Fig. 3a). Although there are still inadequate numbers of ageable long bones, the kill-off pattern again shows the clear predominance of the youngest and oldest age groups. To further strengthen the assemblage age data from Mill Pond IV, dated ca. 1806-1809, was added (Fig. 3b). Again the predominance of the youngest and oldest age groups is visible, although the three to four year age group contains a small percentage.

Given the poor representation of age data for the late eighteenth and early nineteenth centuries, we have included for comparative purposes kill-off patterns from other sites in the region (Fig. 3c-e). The proportions of the youngest age group are quite similar to the later assemblages from Paddy's Alley and the Cross Street Back Lot sites. They also roughly resemble kill-off patterns obtained from the Mill Pond site, although they contain a much smaller proportion of the oldest age group.

New England Cattle Husbandry

Maltby suggests that the increase in the number of people not directly involved in food production acts as a major stimulus to agricultural change. The existence of urban centers exerts pressure on the agricultural base of an economy, since a town contains a high proportion of people engaged in non-food producing activities. As this segment of a population rises, the amount of surplus required from agricultural production will increase proportionately.

If Boston had indeed outgrown its own food resources by as early as 1640, as Friedman suggests, how did rural farmers respond to the new demand for beef and dairy products? Baker and Izard (1987) and Garrison (1987) both suggest farmers responded to the new market for beef by the mid-eighteenth century by intensifying traditional methods. Colman (1837, 1839, 1841) suggests that by the early 1800s some farmers were shifting towards greater specialization.

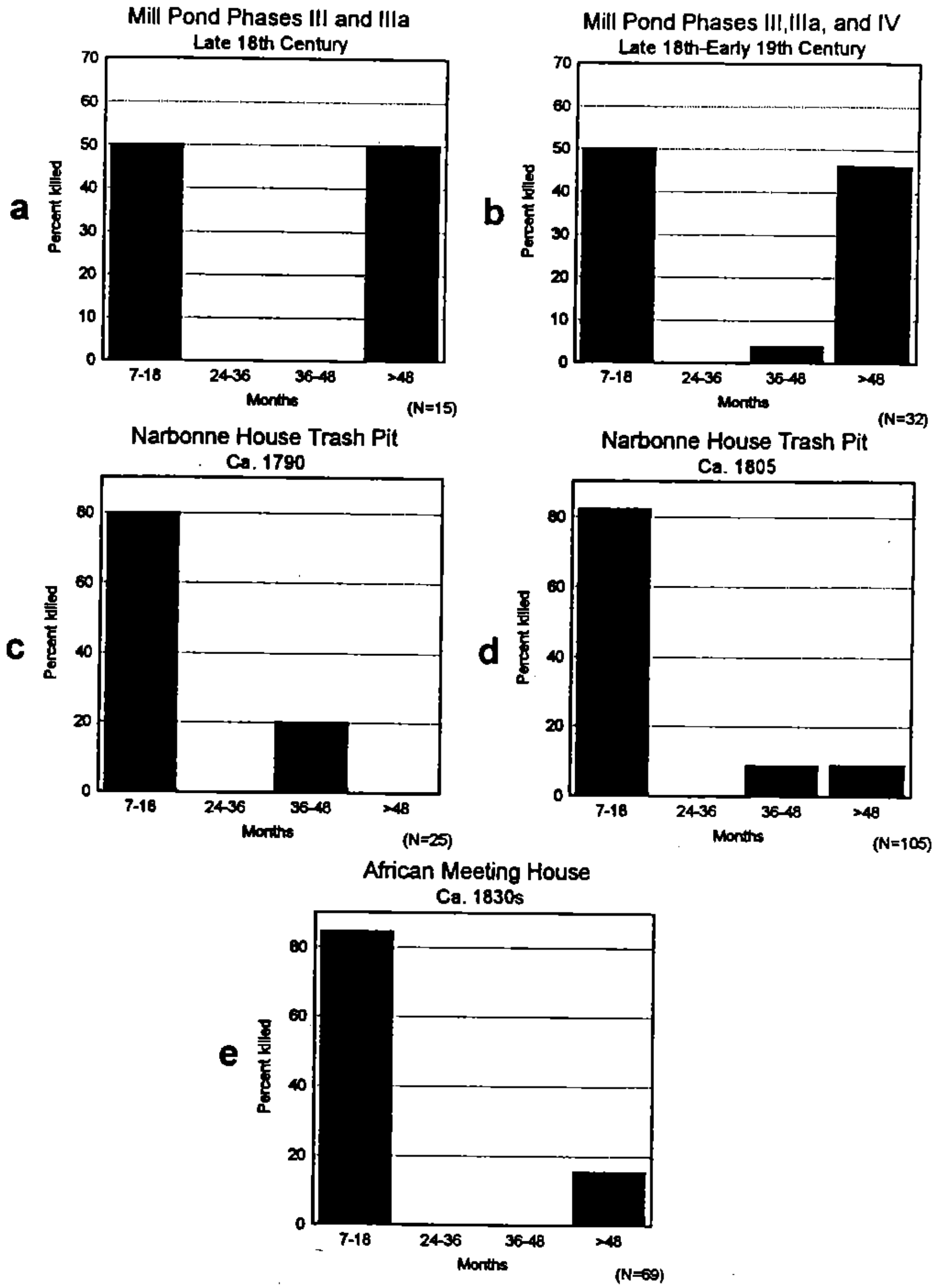


Figure 3. Cattle Kill-off Patterns: 1760-1810.

Subsistence-oriented cattle husbandry in New England was aimed at producing cattle for multiple uses. Cattle were important to New England farmers for their meat, dairy products, and ability to perform a variety of tasks. This was subsistence-oriented agriculture and cattle were raised with all uses in mind. Butter and cheese were made in large quantities; castrated bull calves were allowed to mature and become oxen; all were slaughtered for their meat. What is clear from the documentary sources is that from the early seventeenth century both cattle and the production of butter and cheese were important in New England. Much of the land was thin, rocky, difficult to plow, and therefore ill-suited to tillage. But it made excellent pastures for cattle, and most households kept at least one cow (Bidwell and Falconer 1925; Russell 1976). Moreover, the northern climate, with its cool summers, was perfect for dairying, and virtually every farm wife and her daughters milked, churned butter, and made cheeses for immediate use, as well as for the winter (Bidwell and Falconer 1925; Deetz 1972:26, 1977:53; Russell 1976).

A subsistence study of late eighteenth-century Suffield, Connecticut farm account book entries has shown that virtually every household in Suffield consumed quantities of cheese and butter, which they could have used on bread much as we would use cheese (Sandra Oliver, personal communication, 1989). Those households that had more cows, particularly those owning five or more, could produce all the cheese, butter, and milk their households consumed, plus a surplus that could be sold on the market or loaned or sold to neighbors and kin who could not produce sufficient amounts on their own (Bowen 1990).

Beef, too, was highly desired. Faunal assemblages show that New Englanders had a strong preference for beef (Bowen 1975b, 1982, 1986; Landon 1991). The Suffield subsistence study also reveals a preference for beef over other types of meat; the wealthier households consumed more of it than the poorer households, and they tended to give it to their kin and wealthier friends (Bowen 1990a). Finally, nineteenth-century references show farmers slaughtered three-year-old dairy cows, young animals that probably had given birth to only one calf (Andrew Baker, personal communication, 1987). If milk had been more important than beef, farmers probably would have kept their cows longer. Beef was an important part of their diet.

The cattle kill-off patterns derived from the Mott Farm, an early eighteenth-century site in Portsmouth, Rhode Island, illustrates this subsistence strategy (Bowen 1975b). It shows a preponderance of cattle slaughtered in their prime, at approximately three to four years of age. Had the Motts valued milk more highly, they would have kept their cows longer, and the data would show a higher percentage of older animals. In the youngest age group, there are a few calves, probably bull calves not needed as oxen. There are also a few young individuals killed sometime before they reached 18 months of age. And there were a few oxen and more productive milch cows ages four years and older. The Mott Farm data illustrate the essential characteristics of New England's subsistence-oriented agriculture and herding system.

From the first years of settlement in New England, farmers produced a surplus of cattle, which they sold to incoming immigrants, and later on in the eighteenth and nineteenth centuries to either export to the West Indies or feed emerging urban populations. When, and how, did the farmers adapt husbandry methods? Maltby and others make it clear that methods respond to demand, thus with the rise of foreign markets, or urban population farmers will intensify efforts, but when the demands recedes they will revert to a less intensive form of husbandry (Maltby 1979:88-90).

Demand, therefore, will intensify the exploitation of livestock. As urban populations grow and demands for food increase, therefore, there will be greater incentive to kill off more young animals for meat. By simply keeping more livestock and maintaining the same husbandry patterns, or by decreasing other aspects of animal husbandry, farmers can produce more to sell. But, if this is not possible, for whatever reason, farmers will intensify by adopting new methods of husbandry that are more costly, but will enable them to fatten livestock more rapidly. Ways to do this include improving the quality of the breeding stock, improving nutrition by providing supplemental foods, or increasing fertility rates (Maltby 1979:88-89).

The importance of dairying for home consumption as well as export to the southern colonies and the West Indies has long been recognized (Bidwell and Falconer 1925:106; Russell 1976:160-161; Deetz 1977). Every farmwife milked diary cows to produce butter and cheese for her family, plus some to sell as surplus (Bidwell and Falconer 1925). By the middle of the eighteenth century dairying had become a commercial industry in a few regions in New England, one being Rhode Island:

> *The most considerable Farms are in the Narragansett Country. Their highest Dairy of one Farm communibus annis milks 110 cows, cuts about 200 Load of Hay, makes about 13,000 Wt. of Cheese, besides Butter; and sells off considerably in Calves and fatted Bullocks. A Farmer from 73 milch Cows in five Months made about 10,000 Wt. of Cheese; besides Cheese in a Season, one Cow yields one Firken of Butter, 70 to 60 Wt. In good Land they reckon after the rate of 2 Acres for a Milch Cow... (Douglass 1749 in Bidwell and Falconer 1925:109).*

Bidwell and Falconer described the scale on which this industry was conducted using figures from Updike's Narragansett Church:

> *Farm A, 700 acres, 42 cows, annual product, 9,200 pounds of cheese; farm B, 350 acres, 36 cows, 8,000 pounds of cheese; farm C, 100 cows, 13,000 pounds of cheese (Bidwell and Falconer 1925:109).*

Dairying as a commercial activity continued on into the nineteenth century in some regions. In Berkshire County, Massachusetts the emphasis on dairying grew, in part because of the rich limestone lands, but also because of the nearby Boston and New York markets. By 1811 Goshen, Connecticut, had become a great cheese center, marketing 380,236 pounds of cheese in one year. Many farms kept four or five milking cows, but by 1830 herds of 15 to 30 were becoming more common in these areas which were becoming increasingly committed to dairying. Farmers built dairy houses and diverted springfed streams to large tubs for night and morning milkings (Russell 1976:284-285). Gradually, more farm began to participate in this market, producing whatever surplus they produced into butter and cheese, which they sold to country merchants (Russell 1976:285).

Milk, butter, and cheese are emphasized as the chief products of dairying, although little mention is made of calves as being an important by-product of dairying. Milk production, of course, requires the birth of calves. When dairying became a commercial business far more male calves are born than can be profitably raised to maturity, and some farmers decided it was more profitable to turn their calves into veal than to raise them. They bought young animals—"springers"—in the fall to serve as next year's milch cows (Russell 1976:286). Falconer refers to this problem when he provided the following quote from an 1851 U.S. Dept. of Agriculture report about Maine agriculture:

> *...Our distance from a suitable market for the produce of the dairy, and the difficulty of disposing of our calves, have compelled us to raise more cattle than were profitable... (Bidwell and Falconer 1925:421).*

A readily available market encouraged dairying, not only because urban dwellers needing cheese and butter, but also because they provided a ready market for calves. Falconer remarked that enlarging markets and adequate means of transportation encouraged the development of the dairy industry in New England (Bidwell and Falconer 1925:422).

The by-product of dairying, calves, has received almost no attention in the agricultural texts, and therefore relatively little is known about the extent of the urban market for veal. In part, this is because a lot of what is known about the sale of regionally-produced livestock in Boston is based on the Brighton livestock records, which carefully listed daily prices for cattle, pigs, and sheep. Calves were not recorded as a separate category, and consequently the availability and consumption of veal is less visible in documentary sources. Baker and Izard, however, refer to the increased sale of veal calves that accompanied commercial dairy production (Baker and Izard 1991:38).

The Paddy's Alley/Cross Street/Mill Pond data record the steady increase of veal in the urban diet. All faunal data for cattle remains were examined, including MNI's, NISP, and kill-off patterns. The MNI's, unfortunately, are subject to sample size bias. No consistent pattern was visible, primarily because the majority of assemblages were too small. Evident in the NISP's, however, was a steady increase in proportion of calf remains. (In figuring these proportions, all identified elements excepting vertebrae were included, since the immature calf remains were much harder to identify than the older and better formed adult-sized remains.)

Table 6.
Percentage of Cattle Elements by Body Part

	Cranial		Long Bones		Feet		Total
	Adult	Calf	Adult	Calf	Adult	Calf	N
MP Phase I	24.0	10.0	24.0	18.0	18.0	6.0	50
PA Phase I	48.0	1.8	24.1	5.5	22.2	9.3	54
CSB Phase I	37.3	3.9	35.3	7.8	13.7	2.0	51
CSB Phase I F4	43.8	12.4	19.0	4.8	17.1	2.9	105
PA Phase II	60.3	3.4	17.2	5.2	10.3	3.4	58
CSB Phase II	53.7	1.0	32.6	5.3	4.2	3.2	95
CSB Phase II F4	56.4	3.3	22.3	4.7	11.4	1.9	211
PA Phase III	31.1	7.9	32.3	9.8	15.9	3.0	164
PA Phase IV	37.8	9.0	20.0	12.2	14.1	6.6	426
PA Phase V	45.0	5.0	25.0	10.0	10.0	5.0	20
PA Phase VI	75.0	0.0	25.0	0.0	0.0	0.0	4
CSB Phase III	35.2	4.1	23.8	12.3	16.4	8.2	122
MP Phase V	25.7	6.7	25.7	12.2	23.0	6.7	74
PA Phase VII	23.4	14.9	27.7	6.4	21.3	6.4	47
MP Phase III	41.7	4.2	29.2	8.3	16.7	0.0	24
MP Phase IIIa	18.2	31.8	33.3	7.6	3.0	6.0	66
CSB Phase IV	34.6	11.5	21.2	13.5	11.5	7.7	52
MP Phase IV	19.3	8.8	26.3	19.3	17.5	8.8	57

Note: PA = Paddy's Alley; CSB = Cross Street Back Lot; MP = Mill Pond.

The earliest assemblages from Paddy's Alley Phase I and II and Cross Street Back Lot Phases I and II, both show that between 9.5 and 16.6% of all cattle remains were skeletally immature (Table 6). Those assemblages dating to the 1720s and later show immature percentages of over 20%. Those assemblages dating to the 1730s and 1740s show calf remains are even higher, running from 24 to 27.7% of cattle NISP.

With some puzzling exceptions, the Mill Pond faunal data supports the overall increase in veal consumption. Mill Pond Phases III and IIIa both contain proportions of veal that are similar to the Paddy's Alley and Cross Street Back Lot proportions. But the earliest assemblage of all, Mill Pond I (dated to the late seventeenth- to early eighteenth-century) contains one of the higher percentages; 34% of the NISP were immature calf remains. The mid-eighteenth century assemblage, Mill Pond V, contains one of the lowest percentages, 12.5% of the NISP.

Beef production for sale has a long history in New England. Although this production was almost always on a small scale and it remained embedded in a subsistence-oriented economy, at least by the 1670s Connecticut valley farmers winter-fed cattle on surplus grains produced on the rich bottomland soils (Garrison 1987:1-2).

Once upland towns were established on the perimeters of the river lowlands, a form of regional specialization developed. Located in hilly and rocky locations that were ill-suited to plowing but made excellent pastures, upland farms would sell stock to lowland farms which were located on rich alluvial soils (Baker and Izard 1987; Garrison 1987). Working together, upland farms provided cheap cattle and summer pasturage and lowland farmers would fatten them for market. Uplands had shorter growing seasons and poorer soils that could not produce as much hay or grain crops as the lowland farms. With such marginal pasturage, upland farmers would sell off some cattle in the fall to manage winter feeding. Lowland farms, on the other hand, with their excellent tillage could cut sizable hay and grain crops. In the fall, they would purchase cattle, and then over winter fatten them to sell on the spring market (Garrison 1987:3-4).

This cattle fattening was on a small scale, most farmers purchasing only a couple of cattle, although by the nineteenth century families more commonly fed between four and twelve cattle for market each season. It has been presumed that these cattle were the older oxen past their prime, yet ages actually at which cattle were sold to lowland farmers varied considerably.

> *Oxen were the preferred starter stock. They were purchased in pairs since they were trained as teams from their youth and breaking up a team adversely affected the animals' behavior. The qualities of these cattle could vary considerably as few farmers bred their steers for fattening purposes. The ages of the teams also differed since some farmers sold off cattle they had worked for many years while others unloaded younger teams that were surplus (Garrison 1987:9-10).*

Whatever their age, fattened cattle fed for three to five months, during which time they gained considerable weight. Typical mid-eighteenth century purchase weights ran about 600-1000 pounds; fattening left them 400-600 pounds heavier (Garrison 1987:12). Mostly fat gain, beef from these cattle gained a high reputation in the market.

There is further evidence of regional specialization that evolved in New England. Although Henry Colman wrote of a regional specialization during the early nineteenth century, the husbandry he describes incorporates dairying with fattening beef cattle, but it is similar to the older regional system of cattle fattening and it may, in fact, have grown out of the earlier system. In his descriptions of the state of New England cattle husbandry, he vividly recalls for us an entire region in which the traditional husbandry was becoming increasingly commercialized (Colman 1837, 1839). Where lands were best suited to dairying, farmers focused on that aspect of cattle husbandry; where lands could not support the demands of a dairy herd, farmers raised beef cattle; and in areas of rapidly expanding urban markets, farmers practiced a diversified form of commercial farming that supplied urban residents with vegetables and fresh milk (Colman 1841). In Franklin County in 1841 dairying did not enter much into the river farmers' economy. Instead, they kept only enough cows to supply their own families with milk and butter, and devoted their commercial enterprise to raising young stock or fattening beef cattle (Colman 1841:41).

Colman's descriptions of fattening cattle indicate that not all farmers practiced the same husbandry. Depending on the type and quality of land they owned, some farmers preferred to fatten older oxen aged four to six, others preferred cattle aged three to five, and a third group preferred young stock one to three years old. "It is obvious," Colman states (1841:63), "that different kinds of stock may be properly preferred by different farmers, according to the peculiar situation and circumstances." On more than one occasion Colman indicates these young steers were fattened for market because they needed less feed than the older cattle. The experienced farmer was shrewd and picked the small-boned and thirty one- and two-year-old animals for stall-feeding (Colman 1841:54-55; 63-64). Yearlings could be purchased cheaply in the fall, fed hay throughout the winter, then in the spring simply put out to pasture. By June or July they were ready for market at approximately double their purchase value. How many farmers actually followed this scheme is not known; undoubtedly the quality and type of land had much to do with what choices were made.

It is not known at which ages cattle were fattened and sent to market. Assumptions have probably erred towards the older worn-out stock, as is evidenced by a quote used in Bidwell and Falconer's essay on fattened cattle from Maine:

> *Much of the beef made in this vicinity is from cows which, through age, have become unfit for the dairy, and from oxen which are worn out with hard labor. It is customary to milk the coss until August or September, and as soon as they can be dried of their milk, begin to feed them, first with green corn stalks, small corn, potatoes and meal; and the value of the feed given them is generally much more than the value of the beef when slaughtered. The oxen intended for beef are generally worked in the spring as long as they are able to drag the plough, because it is the last springs work which they will do, for the owner intends to fatten them" (Maine Board Agriculture, 19th Annual Report 1874:275).*

The faunal record monitors the scale of husbandry activities. Kill-off data derived from the Paddy's Alley/Cross Street/Mill Pond sites show an important shift in husbandry occurred beginning in the 1720s and 1730s. The earliest assemblages (1700-1720) contain a broad range of ages in relatively equal proportions. Those that date to 1720 and later, however, appear increasingly like those of the late eighteenth and early nineteenth centuries.

Maltby (1979) reports a similar shift in slaughter ages occurred in England during the sixteenth century. In Exeter, England, large numbers of calf remains appeared in faunal assemblages at the same time as urban populations rose. He attributes this pattern to be the first sign of specialized husbandry:

> *Exeter's demands for meat are reflected in the large number of calf bones in the deposits investigated to date. Many of these animals were the products of the dairies and were fattened for early slaughter (1979:92-93).*

Maltby cautions us that it is hard to estimate the importance of dairying on the basis of the bones themselves. However, documents show clearly that large-scale dairy farming increased greatly in the postmedieval period. In the seventeenth century England had a profitable export trade in dairy produce to western Europe based on surplus cow milk. He states:

> *... the appearance of calf bones in large quantities in the Exeter deposits during this period is indirect evidence of the importance of the dairy industry. Calves were fattened in the dairy to provide veal and rennet from the calves' stomachs was an essential ingredient in the manufacture of cheese. Veal, therefore, was a natural supplement of dairying (Maltby 1979:84).*

The increasing presence of veal in urban assemblages, then, may provide an indirect measure of the importance of dairying. Even if relatively few farmers engaged in this form of specialized husbandry they may help monitor the occurrence of this specialized activity, because the by-product, veal, would wind up on the same plates in town. If indeed the presence of increasingly large numbers of veal is a marker for an urbanizing economy, then the Paddy's Alley/Cross Street/Mill Pond kill-off data chronicles for the period (when Boston's population increased by about 30%) the very early beginnings of commercial husbandry practices.

Whether Boston's market for beef could be satisfied largely with fattening the older surplus cattle on farms, or whether a measurable number of farmers had begun more specialized fattening practices is less clear. The presence of large numbers of calf bones, unfortunately, biases the data towards dairying as virtually all the remains in the youngest age group are those of calves. It is clear, as is evidenced by the presence of older individuals in the greater than 48 months age group in every late eighteenth-and early nineteenth-century urban faunal assemblage, that older surplus stock were being fattened in the traditional manner as described by Bidwell and Falconer (1925), Russell (1976), Baker and Izard (1991), and Garrison (1987). When large scale fattening of young store cattle began cannot be determined at present. More nineteenth-century faunal assemblages need to be analyzed to pin down this aspect of specialized cattle husbandry.

Lewis builds a strong case for the introduction of imported beef beginning by the 1750s and continuing on through to 1762, when prices for local beef returned to normal. Beginning in the 1740s local entrepreneurs began to divert locally produced cattle from the Boston market by selling it to supply provisions for the military. The next best, and cheapest source of meat was the southern colonies, particularly South Carolina, which had been commercially producing cattle since the late seventeenth century (Otto 1987:13-24). Boston merchants filled the gap by importing beef from the southern colonies, South Carolina in particular (Lewis 1984:257-291).

Thus, there appears to be a relatively narrow window in the eighteenth century when imported beef needs to be carefully considered. The only faunal assemblage even closely dating to this period is the Mill Pond V assemblage, dated to ca. 1769. In looking over the kill-off patterns, there is the unusual presence of cattle from the two to three year age group. This assemblage is very small (N=29), yet one must put forth the possibility that these remains may well have included cattle imported from another region.

Swine Husbandry

No analyses of pig kill-off data comparable to that of cattle exist; hence this section will briefly describe kill-off data obtained from the Paddy's Alley, Cross Street, and Mill Pond sites, comparing it to data from the Mott Farm, an early eighteenth-century rural site in Portsmouth, Rhode Island, and data obtained from the African Meeting House in Boston and the Narbonne House in Salem, Massachusetts. Some possible interpretations will then be provided.

Late Seventeenth-Early Eighteenth Century

Mill Pond I, the only assemblage dating to this early period, shows a kill-off pattern where the two youngest age groups predominate and in fact are the only age groups represented (Fig. 4a).

1700-1720

Four assemblages (PA Phase III, CSB Phase II, PA Phases I-III, and PA Phases I-III/CSB Phases I-II) were included in this group (Figure 4b-e). All kill-off patterns dating to this early period consistently reveal a proportionately large number of individuals in the 12-30 month age group. Ranging from 44% to 52% of the total population, this group shows a preference for keeping individuals over one winter before sending them to market. Equally consistent was the lack of older individuals; only one assemblage, the combined Paddy's Alley I, II, and II and Cross Street Phase I and II, contain any in the oldest age group. Variability exists in the youngest age group, ranging from 33% to 18% of the total. Likewise the age group 30-42 months shows variability exists, with proportions ranging from 19% to 31% of the total.

1720s-1740

Overall, pig kill-off patterns in this period (Figs. 4f and 5a) are very similar to those from the 1700-1720 time period. They show a predominance in the 12-30 month age group, with percentages ranging from 52% to 58%, a figure slightly higher than in the earlier period. Also evident is a decrease in the 30-42 age group, dropping from a range of 19-31% in the earlier period to 5-8%. Also introduced in this period are older individuals aged greater than 42 months. Percentages of these individuals range from 6-7%. The youngest age group are quite similar to the earlier period, making up 33% of the total.

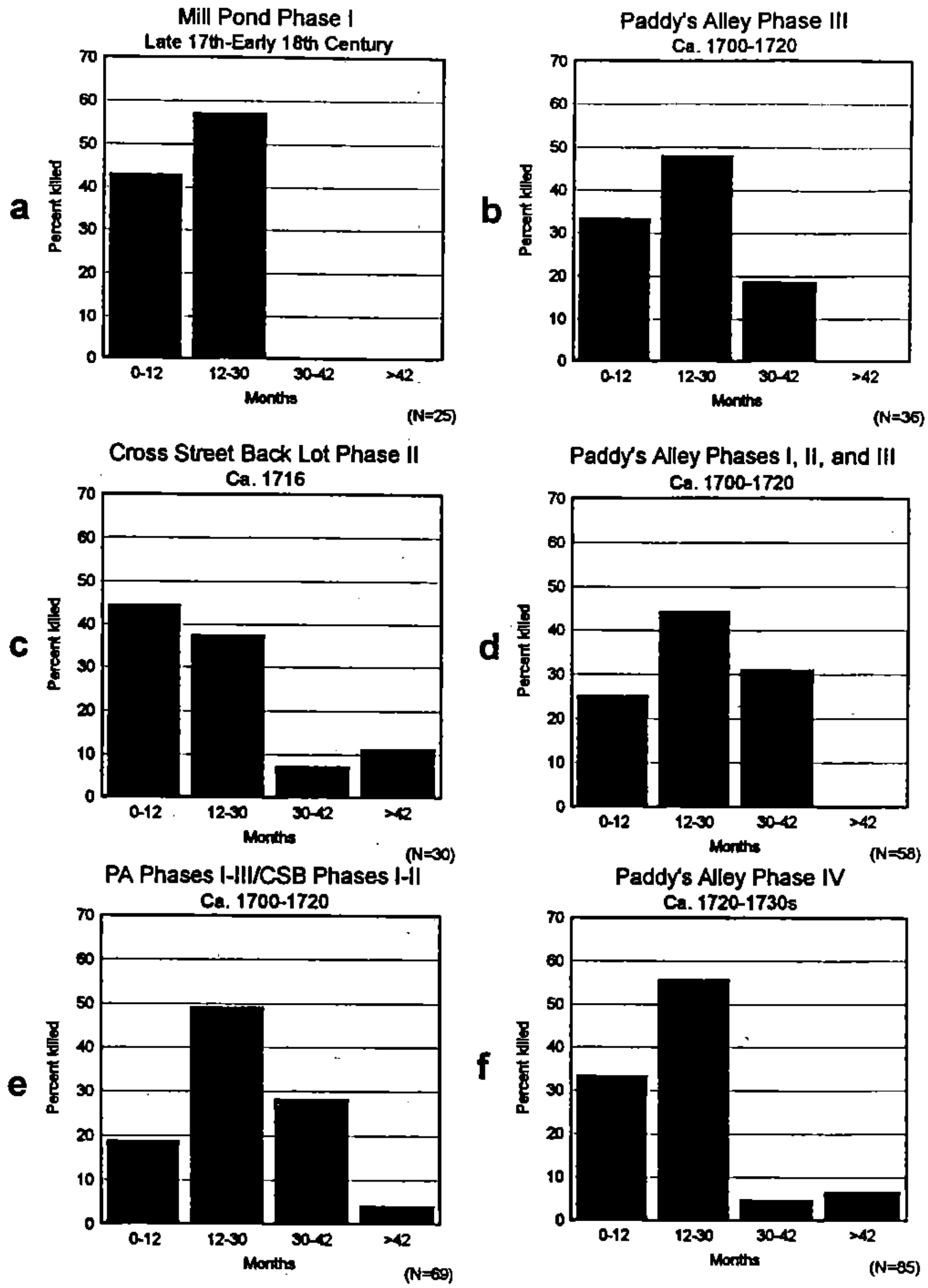


Figure 4. Swine Kill-off Patterns: Late Seventeenth Century-1720; 1720-1740.

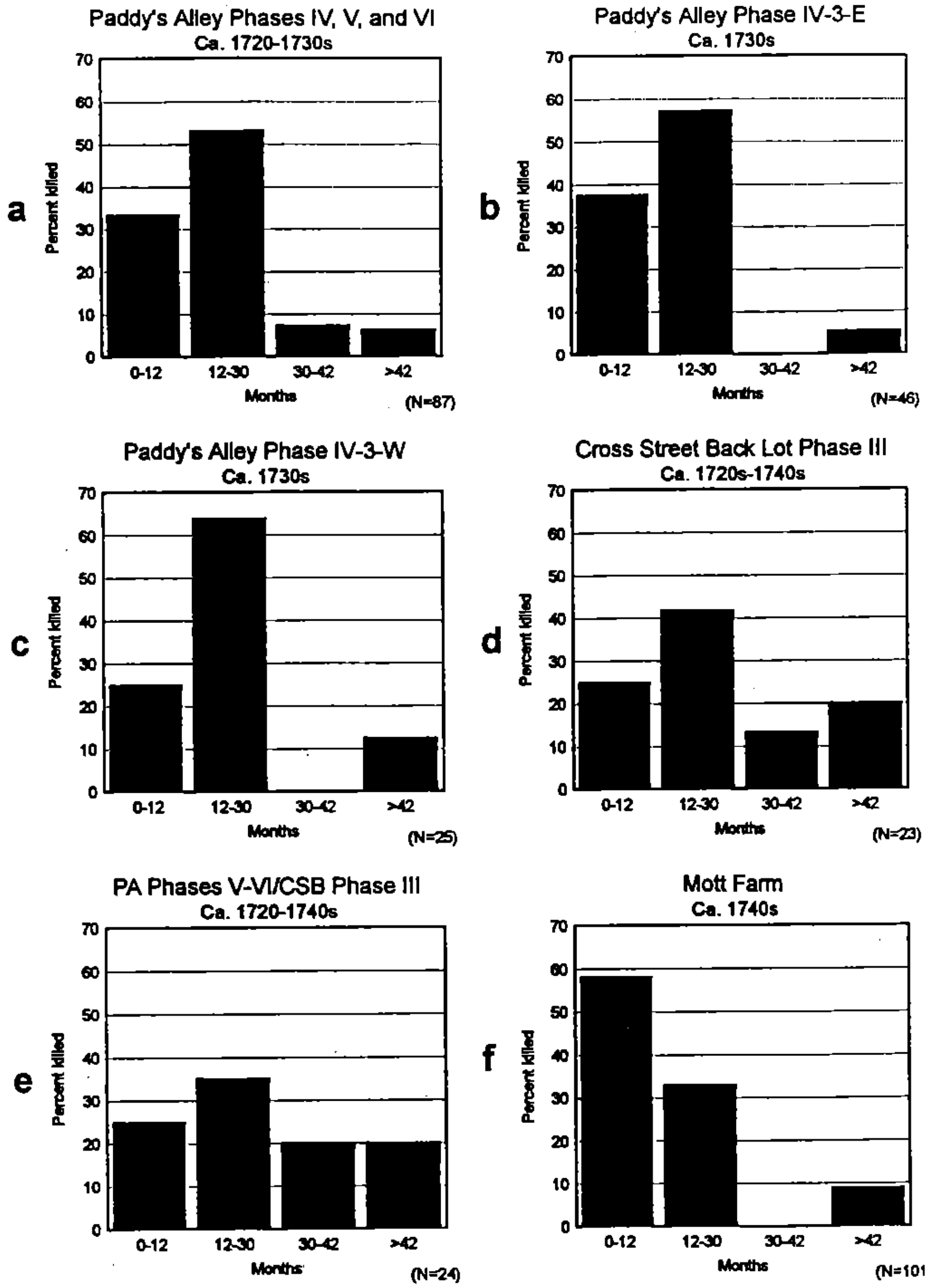


Figure 5. Swine Kill-off Patterns: 1720-1740.

Two assemblages from the 1730s, Paddy's Alley IV-3-E and Paddy's Alley IV-3-W, differ from those dating to the 1720s-1730s in that no individuals fall in to the third age group, 30-42 months (Fig. 5b-c). In other respects they are very similar, although the 12-30 month age group is proportionately even more important (58-62%) and the youngest age group, 0-12 months, showing greater variability than the earlier periods, with percentages ranging from 24% to 38% of the total.

Only one group of faunal remains, the Cross Street Phase III assemblage, contained sufficient numbers of ageable long bones to even attempt to construct a kill-off pattern (Fig. 5d). When combined with Paddy's Alley Phases V and VI (Fig. 5e), only one ageable long bone was added. Nonetheless, they show very different patterns. The older age groups, 30-42 months and greater than 42 months show a marked increase, a predominance which leaves fewer individuals in the younger two age groups.

1760-1810

One assemblage, Mill Pond V, dated clearly to the third quarter of the eighteenth century. Disappointingly small like Mill Pond I, this assemblage produced 22 ageable long bones (Fig. 6a). Too small to be statistically reliable, this data should be taken as only a general indicator. Despite its small size, it is remarkably similar to the kill-off pattern for the Mott Farm swine data (Fig. 5f). Here is a clear predominance of the youngest age group, a reverse from the more frequently occurring predominance of the second age group.

As with the cattle data, no assemblage from either Paddy's Alley or Cross Street Back Lot produced sufficient numbers of ageable long bones to produce any kill-off patterns during this period. The Mill Pond site, fortunately produced at least marginally useful kill-off patterns. Mill Pond III, IIIa, and IV, combined to increase the sample size, shows a kill-off pattern that differs from any other (Fig. 6b-c). In them, the third age group, 30 to 42 months, predominates.

For comparative purposes we have included data from the African Meeting House, an early nineteenth-century site located in Boston, and the Narbonne House, a late eighteenth- and early nineteenth-century site in Salem (Fig. 6d-f).

Both Narbonne House faunal assemblages, one dating to ca. 1790 and the second to ca. 1805, come from trash pits. Protected from rodent and carnivore activities, the damaging effects of changing climatic conditions and human feet, the bones were in excellent condition. The older pit contained fewer ageable long bones than the more recent, but both contain instructive data on kill-off patterns. In both the 12-30 month old group predominated, although substantial numbers of the youngest group (0-12 months) and the 30-42 month group were also present. In the ca. 1805 trash pit were also a small group of the older (greater than 42 months) group.

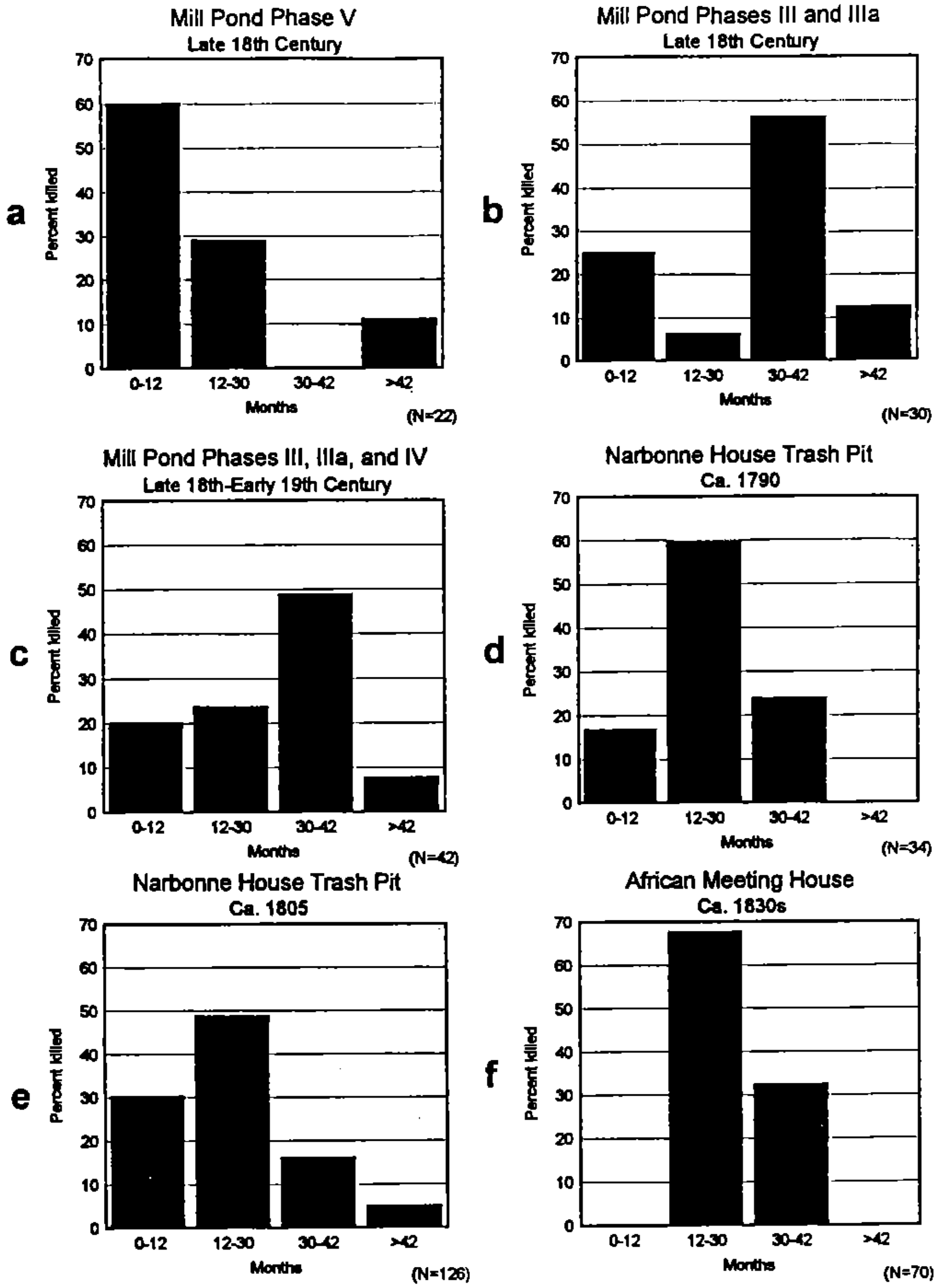


Figure 6. Swine Kill-off Patterns: 1760-1810.

In contrast, the African Meeting House swine kill-off patterns contain a much narrower range of ages. The 12-30 month group predominates as in the Narbonne House, Paddy's Alley and Cross Street Back Lot kill-off patterns, and the 30-42 month group is well represented. But the youngest age group (0-12 months) or the oldest age group (greater than 42 months) is not represented at all.

New England Swine Husbandry

Some kill-off patterns contain more elements than others and, aside from interpretive problems in general, they are clearly more reliable than those with very small numbers of elements. The reader should keep the assemblage size in mind when assessing this data. In general, however, the pig age data show that pigs were killed at a wide range of ages but, regardless of sample size and with the exception of the Mill Pond III, IIIa, and IV data, the majority were in the 12-30 month age group. Over time the proportion of 12-30 month olds increased somewhat, although the 0-12 month group remained a significant proportion of the population. The Paddy's Alley Phases V-VI/Cross Street Back Lot Phase III grouping shows significant proportions of the two older groups. However, the assemblage size is so small, and it differs enough from the rest, that this data may be too problematical to be trusted.

The latest period, 1760-1810, shows in general a move away from the youngest age group. Increasingly swine aged 12 months to 42 months were slaughtered. Possible reasons for this need to be explored.

Given the scarcity of mortality data for pigs, kill-off patterns from both rural and urban New England sites will be included for comparative purposes. Viewed alongside the pig age data in the Paddy's Alley/Cross Street/Mill Pond kill-off patterns, it is possible to formulate ideas about how the production of pigs for urban consumption might have differed from pigs raised for rural consumption, and to show how the production of pigs for urban consumption progressed as Boston developed into a major urban center.

From the earliest years of settlement, through the eighteenth and nineteenth centuries and maybe even into the twentieth century, raising pigs on rural farmsteads was an important task. Fundamentally adaptable livestock, they did well in forested as well as cleared areas for they fed on virtually anything, including food wastes, agricultural wastes such as whey from cheesemaking, skim milk from butter making, clams, other shellfish, acorns, and a variety of nuts.

> *As soon as the acorns, beech-nuts, and &c begin to fall, they are driven to the woods, in large herds, to feed on them. The delicacy, taste and nutrition of these nuts are particularly suited to the palate of these animals, so that in a short time they grow to a great size. The hog prefers the beech-nut to any other, and the effect of that preference is visible in growth and fat, hence a good beech nut year may be called a good swine year.... (Allen in Vt. Hist. Soc. Collections I, 483, quoted in Bidwell and Falconer 1925:111).*

After harvest, swine were fattened for a few weeks on Indian corn, and sometimes potatoes, other root crops, peas, and beans. Slaughter ages varied, either at 8-10 or at 18 months of age (Bidwell and Falconer 1925:111). Those slaughtered at a younger age had been born in the spring, allowed to mature throughout the summer, then during the fall fattened and slaughtered as soon as temperatures dropped. Those slaughtered at 18 months had been kept over winter, allowed to fatten over the summer to a more mature weight, then fattened and slaughtered the next fall.

The age data from the Mott Farm site shows that Jacob Mott followed the first strategy, slaughtering most of his hogs at less than a year, although he also wintered over a sizable number until their second year. In contrast to this pattern, Bidwell and Falconer (1925:111) assert farmers more commonly butchered their hogs during the first year. Why the variability exists is not clear; possibly the age at which hogs were slaughtered depended on whether pigs were allowed to run loose, or whether they were fed primarily dairy waste.

Raising pigs in urban communities was, as was raising cattle, different than on rural farms. In rural towns, having relatively larger amounts of developed and undeveloped land than cities, keeping pigs was easy. They could run in the woods, on partially cleared tracts known as the town commons, or even fend for themselves in town. Surprisingly, it was not until the nineteenth century that some towns began to restrict their wanderings in town and along roads (Bowen 1990). In country towns swine, yoked or ringed, still ran at large and were expected to feed in the woods and in town along the highways (Russell 1976:287).

Keeping swine was an important and colorful part of urban life. Throughout the eighteenth century livestock keeping was encouraged in Boston; some pasturage was available on the commons and nearby on islands and outlying areas. Speaking of Boston during the early decades of the eighteenth century, Carl Bridenbaugh wrote:

> *The problem of stray animals continued and grew in this period. Extension of highways provided new worlds to conquer for the hardy town hogs, and offered a larger stage for their incessant warfare with village dogs. "Noisome swine" troubled inhabitants of every town, and were everywhere the subject of perennial legislation, generally with small effect. At Boston active hog-reeves and large fines reduced the problem to a minimum, but at Newport in 1703 so many porkers were running loose that several children were "in danger of being destroyed by them" (1971:167).*

The prevalence of pigs during the eighteenth century is further indicated by health regulations that began at the turn of the nineteenth century, requiring pigs to be confined in narrow yards and pens. Blake (1959:165), writing from the town ordinances, observed that orders to keep pigs penned were constantly evaded, but generally by the turn of the century Boston managed to keep them from roaming the streets. Hence, during the early decades of the eighteenth century the residents of Paddy's Alley, Cross Street, and Mill Pond in all likelihood kept pigs. Future work with probate inventories of individuals living in the neighborhood would help demonstrate the extent to which the residents kept pigs for their own consumption.

Whether the residents butchered hogs themselves is more questionable. Beginning in the 1690s the town limited the sites where slaughterhouses could be located, and by the middle of the eighteenth century there was almost no butchering being done in the city itself (Marten 1980:12). The extent to which private residents were made to adhere to these laws, whether they slaughtered the animals themselves or had professional butchers slaughter them, is not known.

To determine to what extent the artisans, tenants, and other occupants of Paddy's Alley, Cross Street Back Lot, and Mill Pond sites raised pigs and/or purchased meat from the nearby market will require additional research with probate inventories and other records. It is probable, however, that they not only raised pigs themselves, but also purchased a certain amount of pork produced by rural farmers. Given this situation, it is not likely that age data produced from these urban faunal remains can reveal the source of the meat, and whether it was purchased or produced in the city. It is interesting to note, however, that the age data from Paddy's Alley, Cross Street, and Mill Pond is different from the Mott Farm age data and more similar to age data from the urban Narbonne House and African Meeting House. Further confusing the situation is the fact, as has already been pointed out, that the Mill Pond V *is identical* to the Mott Farm swine data. Future research might help identify the different approaches to pig husbandry that resulted in these distinct kill-off patterns.

Mark Maltby observes that in Exeter, England, during the postmedieval years of rapid urban growth, there was a move towards greater numbers of pigs killed during their first year (Maltby 1979:55-59). He attributes this change to the increase in dairying and cheesemaking which produced whey. A convenient food for pigs, dairy farmers often combined raised pigs for market on this by-product of cheesemaking. Although many dairy farmers no doubt combined pig raising with the business of producing cheese, this probably did not happen until relatively late, for Howard Russell (1976:362) emphatically claims that for as long as swine husbandry persisted in the domestic farm economy and garbage feeding, it was never a major farm enterprise in New England.

Perhaps, too, as long as hog-raising in Boston was a common occurrence, the market for pork was not strong and farmers therefore did not engage in commercial hog-raising to any great extent. But some commercial hog-raising had to have taken place, as Rothenberg (1981) points out in her study of rural market patterns. She refers to the late eighteenth and early nineteenth centuries, but these husbandry methods might well have been in place earlier in the century. Our data, which shows the predominance of the 18-30 month age group in all the urban assemblages, agrees with Rothenberg's data (1981:306), which shows swine brought to market were generally over a year old. Taking this fact into consideration with the Mott Farm pig data, plus the knowledge that rural farmers often wintered over pigs into their second year before slaughter would lead us to look closely at dairy waste fattening as an integral method of a profitable method of fattening hogs for market.

Further complicating the situation is the fact that, as Lewis points out so well, "Massachusetts farmers never embraced hog farming despite large demand for pork in Boston and Salem" (Lewis 1984:50, 278). Again, as with beef, merchants imported pork during the 1750s and 1760s from the southern colonies. Is the fact quantities of pork were imported during this period explain the Mill Pond V swine kill-off data, which is unique among the urban swine kill-off data? Clearly much more work needs to be done.

SHEEP/GOAT HUSBANDRY

Virtually no analyses of New World caprine kill-off data exists; hence this section will briefly describe kill-off data obtained from the Paddy's Alley, Cross Street Back Lot, and Mill Pond sites, comparing it to data from a rural site, the Mott Farm, and two urban sites, the Narbonne House and the African Meeting House. Some possible interpretations will then be provided.

Late Seventeenth Century-1720

Only one assemblage dates to before 1700, Mill Pond Phase I (Fig. 7a). With only a very small group of bones, the kill-off data is far from strong, but it does provide some general comparisons. Despite the relatively small sample size (N=26), the kill-off patterns show the oldest age group is the most important, showing over 60% of those killed were over 3½ years old when slaughtered.

Five assemblages (PA Phase III, PA Phase III-E, CSB Phase II, PA Phases I-III, and PA Phases I-III/CSB Phases I-II) were included in this early group (Fig. 7b-f). In all assemblages of this period, except that from CSB Phase II, the oldest age group of individuals aged greater than 42 months old, predominated. Ranging from 45% to 58% of the total population, clearly more older sheep were being consumed by the occupants of these homes. More variability is present in the middle age groups, with the second group (18-30 months) ranging between 15% and 35% and the third group (30-42 months) ranging between 2% and 24%.

1720s-1740

Like the earlier phase, kill-off patterns show the oldest age group, those greater than 42 months old, formed the predominant group in the population, although in somewhat diminished numbers (Fig. 8a-f). Here the group formed between 43% and 45% of the total.

In PA Phases IV-3-E and IV-3-W, for example, the oldest age group formed the predominant group, 42% of the total population (Fig. 8c-d). The third age group formed

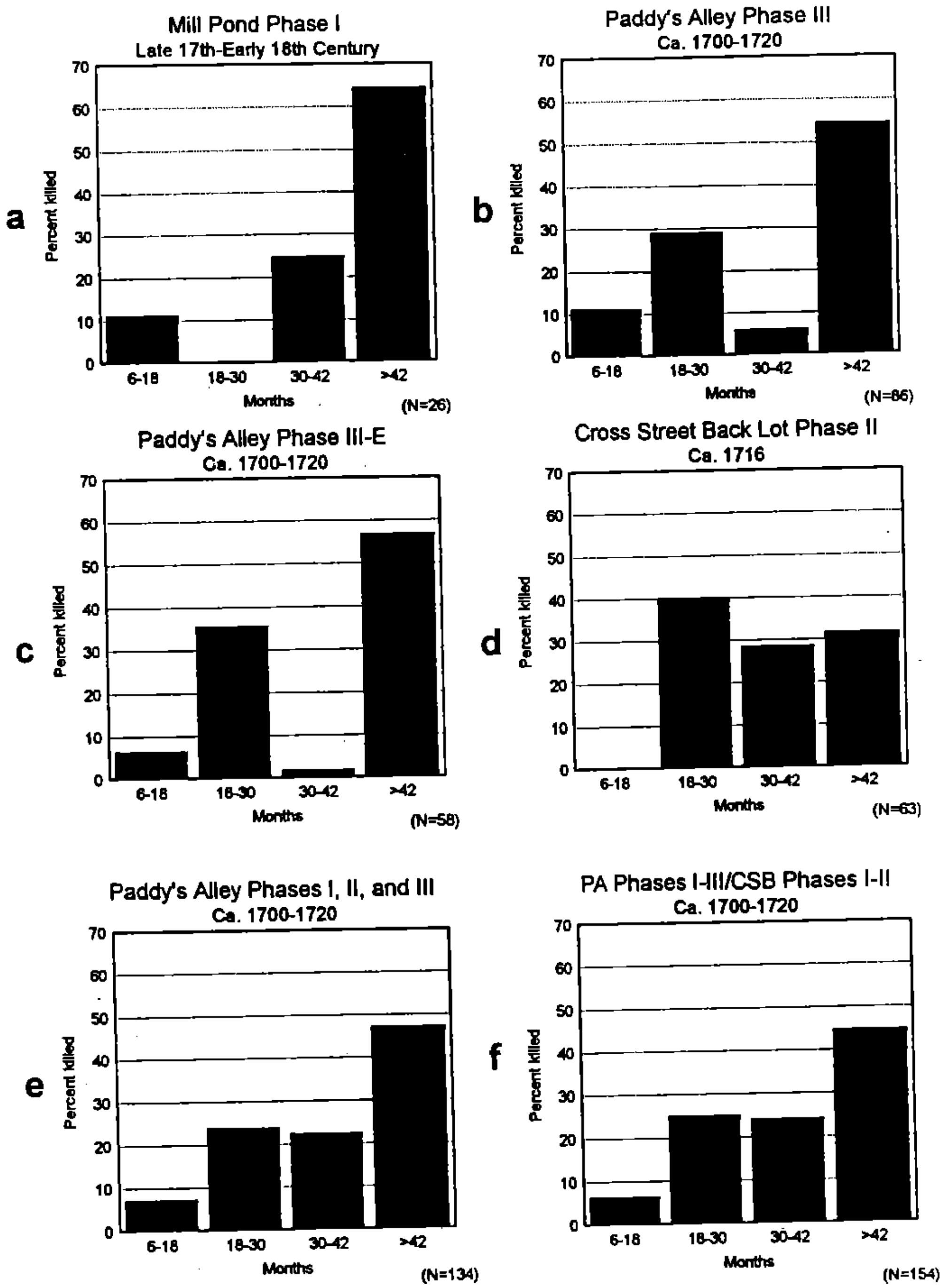


Figure 7. Sheep/Goat Kill-off Patterns: Late Seventeenth Century-1720.

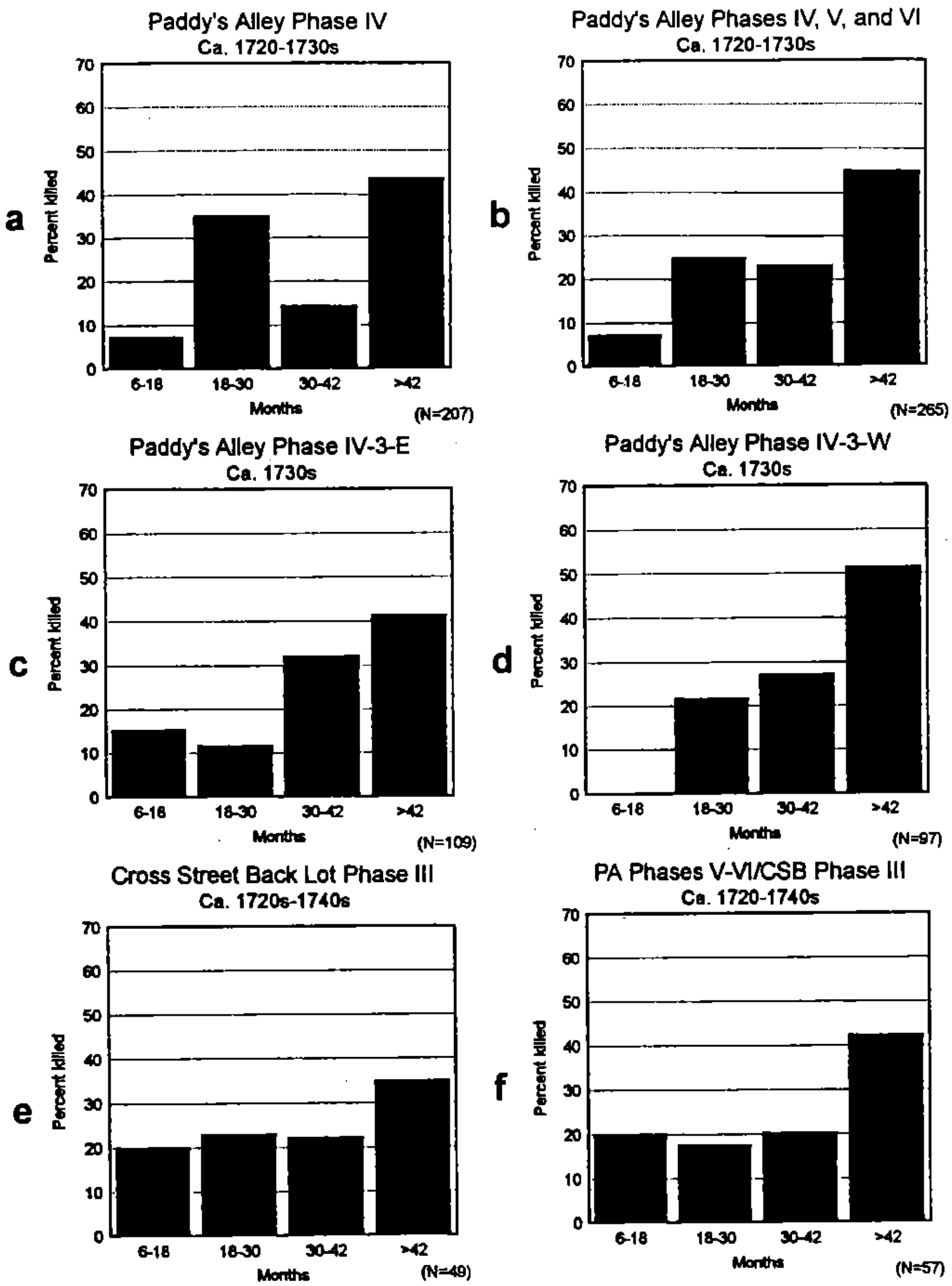


Figure 8. Sheep/Goat Kill-off Patterns: 1720-1740.

the second largest, with 28-32% of the total. The youngest age group, those aged less than 18 months, range from 0% to 15% of the total population.

In CSB Phase III and PA Phases V-VI/CSB Phase III, the oldest age group (those over 72 months of age) is still dominant (Fig. 8e-f). Present in this phase, however, are slightly larger numbers of young individuals, particularly those aged less than 18 months Fig. 9a-b). The oldest age group dropped to 42% and even 35% of the total population, while the youngest age group increased to 20% of the total population.

1760-1810

Only one assemblage dates to the 1760s, Mill Pond V (Fig. 9c). The kill-off pattern is more like the later assemblages, having a relatively smaller proportion of older individuals and greater proportion of younger individuals. In this kill-off pattern individuals aged more than 42 months made up only 32% of the total population.

In PA Phase VII-E (Fig. 9b), the oldest age group dropped significantly from its former dominant position to only 15% of the total population. Increased in importance is the youngest group (6-18 months), which formed 34% of the total population and the third age group (30-42 months) which formed 36% of the total population.

Caprine kill-off patterns from Mill Pond Phases III, IIIa, and IV (Fig. 9d-e) are similar to the kill-off patterns from the assemblage dating to roughly the same time period, Paddy's Alley Phase VII-E. Here, as in PA Phase VII-E, the proportion of the oldest age group is strikingly reduced from the earlier periods. But unlike the Paddy's Alley bones, there is a striking absence of the youngest age group, those we categorize as lamb.

To place these kill-off patterns in better perspective we have included kill-off patterns obtained from rural and urban faunal assemblages including a rural site (the Mott Farm) and urban sites, including the Narbonne House and the African Meeting House (Figs. 9f and 10a-b).

New England Sheep Husbandry

To help understand these caprine kill-off patterns, we have drawn on modern husbandry texts and Sebastian Payne's studies of traditional forms of sheep husbandry and their characteristic kill-off patterns (Payne 1972; Bundy, Diggins, and Christensen 1982). Since flocks are usually kept for several purposes and each purpose affects the kill-off pattern, patterns found in archaeological assemblages can appear indistinct. But by determining slaughter ages characteristic of each use of the animals, it is possible to assess the contributing types of husbandry present in the archaeologically-based kill-off pattern.

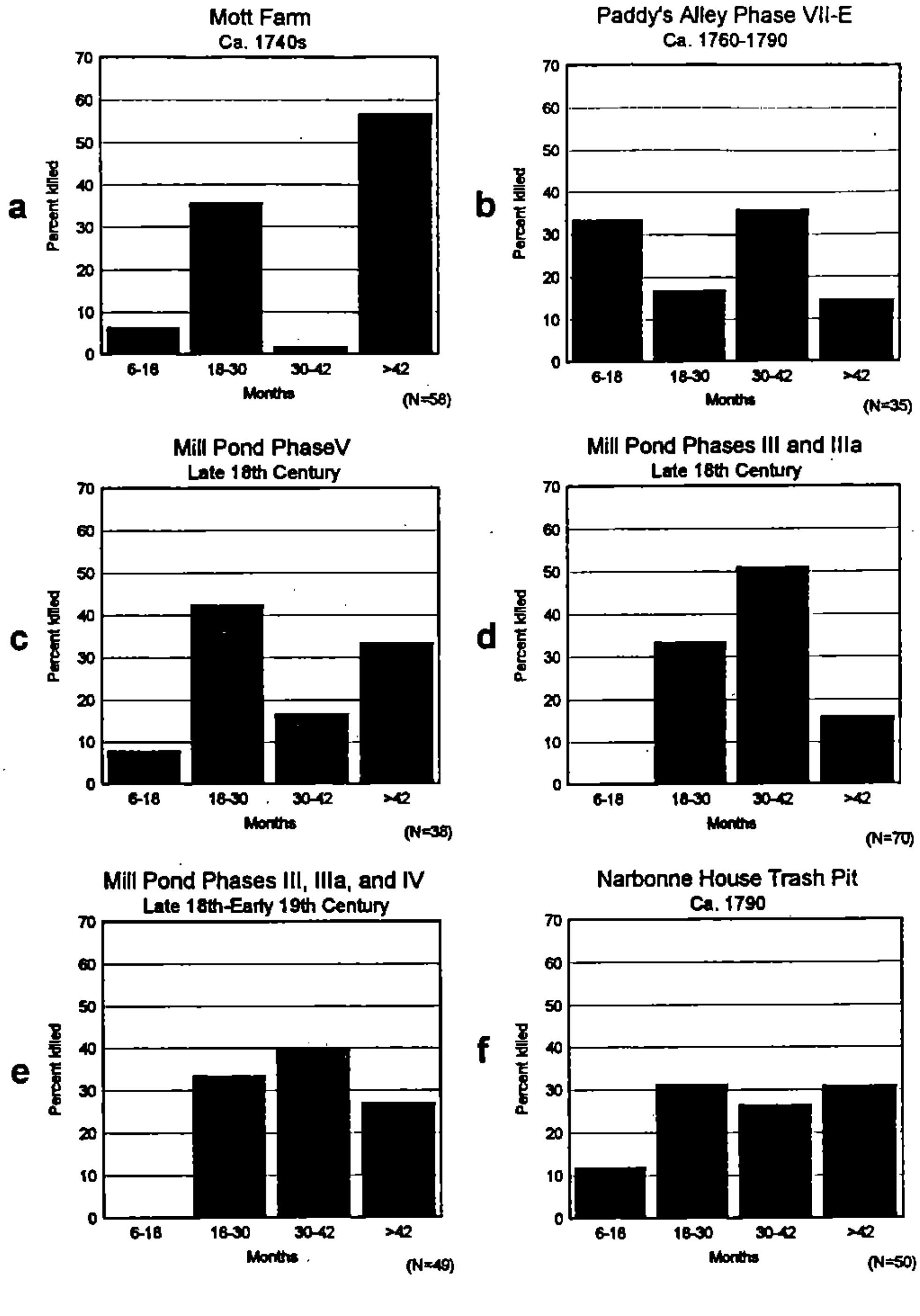


Figure 9. Sheep/Goat Kill-off Patterns: 1720-1740; 1760-1810.

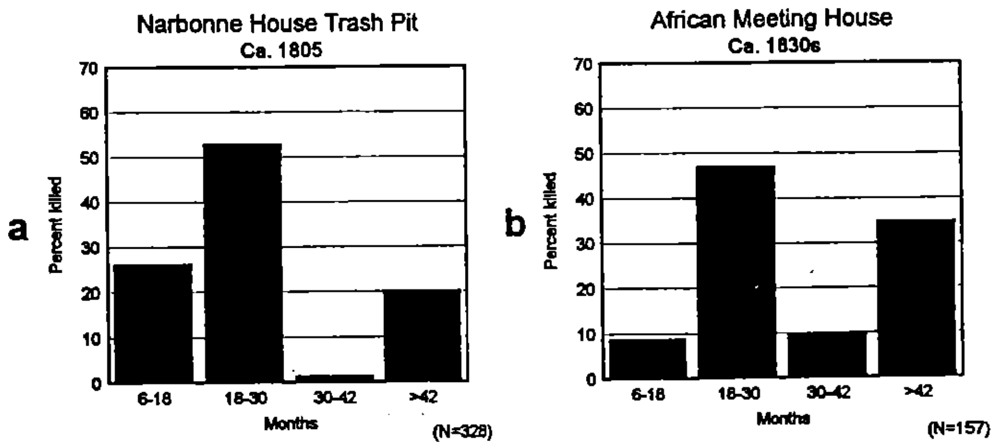


Figure 10. Sheep/Goat Kill-off Patterns: 1760-1810.

Payne's data, along with that of modern husbandry texts produced when sheep are raised solely for their meat, show that approximately 25% are slaughtered in their first year, 40% in the second and third year, and very small numbers in subsequent years. In sheep husbandry aimed at producing meat, the first year kill-off seems to be related to infant mortality. Most males are castrated and then run as a wether flock until their second and third year when they, along with the females not needed for breeding, will be slaughtered. It is at this age that they have reached their optimum weight and the producer has gotten the most meat for the feed given to a lamb and its mother. However, if lamb meat commands a higher price than mutton, lambs will be slaughtered at the very young age of two to three months. Other age groups that become part of this kill-off pattern are the few males raised for breeding and the females kept to become breeders. Depending on whether or not the farmer wants to increase his flock, these females may or may not be killed when they no longer produce healthy lambs. The sick and injured are usually killed for meat, and barren young ewes are killed.

A second use for sheep is the production of wool. The kill-off pattern Payne gives for this purpose is 25% for the first year (again these individuals' deaths seem to be related to infant mortality), small numbers from the second year up until the sixty year, then somewhat larger numbers (approximately 10%) each year thereafter. When wool is the sole purpose for raising sheep, breeding is limited to the replacement needs of the flock. Males not needed for reproduction are castrated and run as a wether flock. When the quality of their wool falls off (modern figures indicate 6-7 years), they will be slaughtered.

A third use is for milk. If milk is the sole purpose for raising sheep, young lambs will be killed as soon as the yield of milk is not endangered. This pattern may not be applicable for colonial husbandry, however, as records do not indicate sheep were ever raised for their milk.

When sheep are kept for multiple purposes, the kill-off pattern is the result of the varying degrees of importance placed on the different products. If sheep, for example, are kept for milk and meat, and winter feed is scarce and milk is more important than meat, the lambs will be killed at 6-9 months, probably in the fall after the summer's growth and when the natural pastures no longer can support the flock. But, if meat is relatively more important and winter feeding is no problem, generally, the sheep will be slaughtered in its second or third year.

Analysis of the kill-off pattern in the Paddy's Alley, Cross Street, and Mill Pond assemblages in light of this information (and the documented importance of wool to the New Englanders) shows that throughout the colonial period—indeed into the nineteenth century—sheep were raised for their wool. Testimony to this are the kill-off patterns, which invariably show a large proportion of older individuals. But also apparent is an increase in the production of sheep for meat, which is seen in the gradual increase in younger individuals in the kill-off population.

Although most kill-off patterns dating to this early period indicate the predominant slaughter group were those older than 42 months, the caprine remains from CSB Phase II show an equal number of younger individuals were slaughtered. Equal to those aged over 42 months were those aged between approximately 18 and 30 months and 30 and 42 months. This anomaly to an otherwise strong patterns needs further exploration, including possibly differential preservation patterns, or even differential household consumptions patterns.

Sheep were relative latecomers to the New World. They are vulnerable to predators, more sensitive to severe winters without shelter than other livestock, wool coats that could be pulled away by the undergrowth, and dependent on pasturage. Goats, on the other hand, were well able to forage on undeveloped lands, and they provided both milk and meat (Bidwell and Falconer 1925; Dandoy 1994).

By the mid-seventeenth century sheep husbandry was encouraged; exportation was prohibited, in the Connecticut Colony sheep were exempted from taxation, and in some towns all males over 14 were required to work one day a year to clear underbrush for sheep pasture (Bidwell and Falconer 1925:28; Russell 1976:154-155). By the late seventeenth century New England had become a center for sheep raising, Bridenbaugh (1974:57) reporting that in 1690 more than 200,000 sheep were kept on the island of Aquidneck.

Sheep became steadily more important throughout the colonial period. Kept on islands and protected pastures, sheep were raised primarily for their wool and only secondarily for their meat. Although commercial sheep-raising was done in some regions, primarily sheep were raised to provide farm families with wool, and thus they formed an integral part of the subsistence-oriented economy.

The late eighteenth century, however, saw a spectacular rise in commercial wool-growing.

> *Wool-growing for home consumption was a standard feature of seventeenth and eighteenth century agriculture, and coarse wool sheep of a hardy but rather unproductive type were kept on every farm. The inhabitants of the commercial towns bought their woolen goods from England... (Bidwell and Falconer 1925:217).*

The War of 1812, however, cut off foreign wool and prices rose rapidly. Wool mills sprang up almost overnight, and the demand for local wool stimulated commercial sheep raising. More and more farmers began to raise sheep for sale, rather than home consumption, and the now famous Merino sheep from Spain were brought in to improve wool-production (Bidwell and Falconer 1925:217-223; Russell 1976:289-290).

Bidwell and Falconer focused their analysis of sheep husbandry on wool production as a home-based activity, later developing into a commercial industry. Agricultural records show the sale of sheep to urban markets, but the assumption that wool-production was the sole focus of commercial sheep husbandry has not received enough attention. Russell does, however, refer to this problem in the early nineteenth century. According to him, farmers living near urban centers "eventually turned to the heavier-fleshed English meat breeds to take advantage of the growing fity demand for roasts, chops, and spring lamb" (Russell 1976:352). Throughout the nineteenth century the urban demand for mutton and lamb increased even as western competition knocked down wool prices, encouraged by the healthy market for New England's high quality breeding stock (Russell 1976:353).

> *Maine farms experimented with Leicesters, Cotswolds, Southdowns, and Dishleys. Farmers bred up the hardy common sheep so as to add half as much again to their fleece weight, but saw to it that their animals still ended with a good mutton carcass. Moreover, their breeding ran to a type that did well on rough pasture. When the 1850 census came, Maine, with 200,000 fewer sheep than its peak of 649,264 a decade earlier, was nevertheless clipping almost as many pounds, and by 1860 showed an increase (Russell 1976:353).*

The demand for mutton constantly increased. According to Russell (1976:353), "Farmers with a good market for meat now bred and cared for the ewes so as to have them lamb in January and February to catch profitable early spring lamb prices."

In Boston, up until 1800 it was possible for residents to raise sheep. On the Commons and on islands sheep were allowed to graze along with horses, oxen, steers, heifers, goats, calves and swine. But after that, excepting cows, only livestock on their way to market were allowed on the Commons. By 1833 all rights were repealed (Marten 1980:19-20). It was possible, then, that sheep could have been kept in town. But all things being equal, would townspeople have had sufficient reason to raise them? Analysis of probate inventories might be the only way to answer this question. For now we are assuming most, perhaps even all the caprine remains found in the Paddy's Alley, Cross Street Back Lot, and Mill Pond assemblages were purchased from peddlers, the market place, or other conveyor of rural produce.

The predominance of older sheep in the earlier faunal assemblages suggests the importance of wool production in New England. Mark Maltby (1979:45-54) observed a similar pattern in postmedieval England, a period when the woolen industry exploded. But the steady decrease in older animals, culminating in the predominance of animals in the 18-30 months group, marks Boston's increased demand for meat and farmers' response to the new demand.

The Availability of Meat in Boston

Zooarchaeologists have demonstrated that as cities grow in size and complexity, households become increasingly dependent upon the provisioning system for their food supplies, and consequently their choice of types and cuts of meat is constrained by that system (Maltby 1979, 1982, 1985). Melinda Zeder (1988, 1991), in particular, has shown that the more removed the consumer is from the production of foods, the more the procurement system controls his or her subsistence. It has been assumed this intensive and regulated flow of produce from rural areas to urban kitchens should leave its distinctive mark on faunal remains in the form of the differential presence of skeletal parts (Maltby 1985:62-65; Zeder 1988, 1991). Elements from restricted portions should be consistently absent in urban assemblages, regardless of their association with different ethnic and status groups.

Of course there are taphonomic-related biases that need to be identified and their impact carefully considered, and the urban center's laws regulating the slaughter and disposal of certain parts need to be identified. After these two important variables have been considered it is possible to make guesses about the ethnic affiliation and status of the household. With this approach, the oft-repeated interpretation that poor people consumed cheap bony cuts of meat and wealthy people consumed the more expensive meaty cuts can be re-evaluated in light of taphonomic modifications and market availability.

By 1640 the urban community of Boston had in many ways become dependent upon rural resources for basic foods and as farmers responded to the increasing need for specific products over the next two centuries they gradually adopted commercialized animal husbandry methods to produce that product. How did the city and its infrastructure handle the influx of animals and meat products?

This too was a gradual process. As early as 1642 and 1656 attempts were made to control animal-processing activities. Butchers were asked to remove themselves to remote locations near millcreeks where water would carry butchering waste away. What with high wages, high taxes, and increasingly restrictive regulations, butchers moved out to surrounding towns. By 1746 most had moved out, and from that time all meat sold in Boston was butchered elsewhere. By 1789 not a single butcher was listed in the city directory (Marten 1980).

By the 1730s there are signs that Boston's redistribution system was becoming commercialized. Several attempts were made to establish centralized marketplaces. Public sentiment against middlemen led to mobs tearing down the Dock Square market building in 1734, but it was rebuilt in 1742, providing a central place for business. No butchers or other middlemen were allowed to sell what they had purchased from the producer, so it was still a place where producers sold directly to consumers (Marten 1980:3).

By the post-Revolutionary period restrictive regulations increasingly controlled market-related traffic. Peddlers could neither work the streets, nor sell from parked carts; spoiled and diseased meats had to be removed from stalls. As the middlemen took on more and more of the purchasing, slaughtering, butchering of livestock, then selling meats, the city passed more regulations controlling these activities. This process, which began with banning the slaughter of livestock to the outskirts of town in the seventeenth century continued throughout the eighteenth and nineteenth centuries, continuing even today as the processing and distribution of foods in this major urban area continue to distance the consumer from the consumer.

Documentary sources indicate that Boston's provisioning system was becoming increasingly restrictive, that the redistribution of animal products was increasingly being pulled under the umbrella of a centralized and highly regulated provisioning system. Can faunal remains provide a measure of these controls?

SWINE

Late Seventeenth Century-1740

In the larger faunal assemblages dating to the first decades and on through the 1740s, with the exception of CSB Phase II that shows a large proportion of heads, the distribution of elements are roughly those of the normal distribution of skeletal elements (Table 7). Some contain slightly more head elements and some less than normal; some contain almost normal numbers of foot elements but most slightly less than a normal number. Overall, the picture is one where the only possible interpretation is that the whole animal was available through the 1740s.

Of the main body parts—the roasts, loins, hams, and shoulders—there appears to be proportionately more hindquarters than forequarters for the period up through the 1740s. In some assemblages this preference is marked, while in others the preference is less marked, but the pattern seems evident. In part the pattern might be due to breakage resulting from butchering and natural modifications such as carnivore chewing and the differential fragility of certain elements such as the innominate and possibly the scapula. Once broken open through chopping or some natural agent, the soft cancellous bone in the innominate makes this element relatively vulnerable. Almost always butchered into several pieces, the fragmented innominates might artificially inflate the NISP. Future manipulations with MNI's that have been taken for each element might help to sort out this problem.

1760-1810

Assemblages dating to the second half of the eighteenth century are generally very small, except for the Mill Pond Phase IIIa, but the proportion of hindquarter to forequarters seem similar to the proportions found in the earlier assemblages. Paddy's Alley VII, which contains only 35 identified elements, shows slightly more forequarter than hindquarter elements, and Cross Street Back Lot IV, which contains only 25 identified elements, shows the reverse. Mill Pond IIIa, on the other hand, shows equal distributions between the fore- and hindquarters.

Table 7.
Element Distribution Summary
***Sus scrofa* (Domestic Pig)**

	Head	Body	Feet	Total NISP
Normal	*28.2*	*34.5*	*37.3*	---
Late 17th c.-1720				
PA Phase I	33.3	45.8	20.8	24
PA Phase II	31.3	31.3	36.4	48
PA Phase III	22.2	46.8	31.0	126
PA Phase III-W	14.3	64.3	21.4	28
PA Phase III-E	24.5	41.8	33.7	98
CSB Phase II	40.0	40.0	20.0	20
CSB Phase II Feature 4	50.0	24.2	20.9	91
MP Phase I	25.8	40.3	33.9	62
1720-1740				
PA Phase IV	28.5	48.6	22.8	333
PA Phase IV-1-W	22.6	48.4	29.0	31
PA Phase IV-3-W	29.4	47.6	23.0	126
PA Phase IV-3-E	30.6	47.8	21.7	157
CSB Phase III	40.2	42.4	17.4	92
1760-1810				
PA Phase VII	48.6	40.0	11.4	35
PA Phase VII-E	50.0	38.2	11.8	34
CSB Phase V	20.0	68.0	12.0	25
MP Phase IIIa	28.9	39.5	31.6	114
MP Phase IV	20.0	56.0	24.0	25
MP Phase V	42.7	44.9	12.4	89
ca. 1790 Narbonne House	41.2	27.8	30.9	97
ca. 1805 Narbonne House	43.9	32.6	23.5	469

Note: PA=Paddy's Alley; CSB=Cross Street Back Lot; MP=Mill Pond. "Normal" indicates approximate normal distribution of skeletal elements.

Taken as a whole, however, assemblages dating to this period indicate that heads and body parts were commonly available. In some there are proportionately more heads than others, but nearly all contain a normal—or even greater than normal—proportion of body parts. In contrast, feet are present in most of these assemblages than in those dating to the first half of the eighteenth century. Comparison to the Narbonne House faunal assemblages, ca. 1790 and ca. 1805, shows that these contemporary assemblages are strikingly similar to the Paddy's Alley and Cross Street Back Lot groups.

CAPRINES

In contrast to swine and cattle element distributions, those for the caprines (Table 8) show that even from the earliest years more body parts are proportionally greater than in a normal skeleton. In contrast to the swine, the forequarters and hindquarters appear in equal proportions to each other. So consistent is this pattern (there is only one exception, CSB Phase I with only 23 identified elements) that it is possible to suggest mutton was neither raised nor obtained whole from the countryside. The inhabitants of Paddy's Alley, Cross Street, and Mill Pond sites probably purchased mutton as quarters or individual cuts of meat.

Late Seventeenth Century-1720

For the earliest decades of the century, heads compose anywhere from 7.2 to 56.1% of the NISP's. Thus they range proportionately from significantly less than normal to much greater than normal. The presence of feet in the assemblages, on the other hand, appear much as expected. With the notable exception of the caprine remains from CSB I, the proportion present is much less common than normal, ranging from 13.5 to 18% (in a normal skeleton they make up 28.1% of all elements).

1720-1740

With one notable exception, Paddy's Alley Phase IV-1-W, where both heads and feet appear only in small numbers, heads appear in proportions ranging from equal to less than in the normal skeleton. The picture is the same as in the earlier decades, equal or fewer head elements than normal, but consistently greater proportions of body parts, and smaller proportions of foot elements than in a normal skeleton.

1760-1810

Some of the assemblages date to broader periods than we would like, but it is apparent that, like the earlier phases, "body" parts are present, with no exceptions, in much greater than normal proportions than in a normal skeleton. But the proportions of heads and feet shows a certain amount of variability existed.

In two assemblages the proportions of heads drop dramatically to 4.5% and 12%. But in others the proportions of heads are at least as great as in assemblages dating to the first half of the eighteenth century. The proportions of feet are at least equal in importance to the earlier decades, and in two cases, are actually greater than in the normal skeleton. In these two assemblages, Paddy's Alley Phases VII-E and VII-W, feet comprise 32% and 33% of the NISP, respectively.

A comparison to the Narbonne House assemblages, ca. 1790 and ca. 1805, shows that the decrease in head elements seen in the later assemblages is similar to element

Table 8.
Element Distribution Summary
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**

	Head	Body	Feet	Total NISP
Normal	*29.7*	*42.2*	*28.1*	---
Late 17th c.-1720				
PA Phase I	20.5	61.5	17.9	39
PA Phase I-W	22.6	58.1	19.4	31
PA Phase II	23.7	61.3	15.1	93
PA Phase III	27.3	56.1	15.9	289
PA Phase III-W	23.7	57.9	18.4	76
PA Phase III-E	28.6	55.4	15.0	213
CSB Phase I Feature 4	19.6	41.2	39.1	97
CSB Phase II	23.8	66.7	9.5	42
CSB Phase II Feature 4	56.1	33.6	10.2	205
MP Phase I	7.1	75.7	17.1	70
1720-1740				
PA Phase IV	20.1	64.2	15.4	617
PA Phase IV-1-W	14.8	77.0	6.6	61
PA Phase IV-3-W	18.3	64.9	16.3	251
PA Phase IV-3-E	23.3	60.6	16.1	279
CSB Phase III	29.5	50.6	19.2	156
1760-1810				
PA Phase VII	4.7	62.8	32.6	86
PA Phase VII-E	4.7	63.5	31.8	85
CSB Phase V	12.1	68.2	19.7	66
MP Phase III	38.5	42.3	19.2	26
MP Phase IIIa	5.7	70.0	24.3	70
MP Phase IV	21.6	54.9	23.5	51
MP Phase V	24.8	56.8	18.4	125
ca. 1790 Narbonne House	8.8	86.3	4.9	102
ca. 1805 Narbonne House	0.6	79.7	19.7	877

Note: PA=Paddy's Alley; CSB=Cross Street Back Lot; MP=Mill Pond. "Normal" indicates approximate normal distribution of skeletal elements.

normal distribution. In no instance are there enough elements to suggest that feet were commonly available. So consistent is this pattern, that it is tempting to suggest that cattle and calves were not raised in town for consumption as beef and veal, and households did not obtain them as entire carcasses. Beef and veal were probably obtained, even at this early period in Boston's development, as cuts of meat, or possibly quarters with the feet generally removed.

Body parts, considering both calf and adult-sized remains, ranged from roughly similar normal distributions to substantially more (45-61%). As in the earlier decades veal forequarters and hindquarters were more important than calf heads and feet. Adult-sized cattle remains, or beef, show that body parts continued to be important, as they are present in normal or greater than normal proportions.distributions in these assemblages, for both contain proportionately very few heads. Feet in the two Narbonne House assemblages differ from each other, but they too fall in line with Paddy's Alley/Cross Street/Mill Pond data.

In summary, the relative presence and absence of heads and feet varies throughout the century. In some assemblages, though, there is a dramatic decrease in heads towards the end of the eighteenth century. The relative presence of feet truly varies; some assemblage show feet were present in far less than normal, while others show they were present in greater numbers.

In contrast to swine and cattle element distributions, those for the caprines show that even from the earliest years more body parts were available than either the heads or feet. So consistent is this pattern—there is only one exception, CSBL I with only 23 identified elements—that it is possible to state mutton was not raised or obtained from the countryside whole. The inhabitants of Paddy's Alley, Cross Street Back Lot, and Mill Pond purchased mutton as quarters or individual cuts of meat.

CATTLE

The cattle data as it is presented here (Table 9) combines the remains of calves with those of adult-sized individuals. As it has been demonstrated that consumption patterns for the two different age groups were different by at least the early nineteenth century, the reader should refer to Table 5 when considering the relative importance of different cuts of veal and beef.

Late Seventeenth Century-1720

With the glaring exception of the earliest assemblage, veal made up only a relatively small percentage of the total NISP, 12-16%, in the early assemblages. In them, calf heads make up proportionately even less, from 2-10% of the total NISP, with most having only 3%. When considered together with the adult-sized cattle remains, head elements range from 13.5 to 49.2% of all elements. Most, however, fall within, or slightly above the normal distribution of elements in a skeleton. Feet, on the other hand, are proportionately rarer than the normal skeleton, ranging from 7 to 22%.

Adult-sized cattle remains for this period show head and foot portions were more important than for the immature veal calves. But when considered in terms of the normal proportions of a skeleton, together calf and cattle body parts are more within the range of a normal distribution. They range between 43.5 and 54% of the total. Calf bones

Table 9.
Element Distribution Summary
***Bos taurus* (Domestic Cow)**

	Head	Body	Feet	Total NISP
Normal	*29.7*	*42.2*	*28.1*	---
Late 17th c.-1720				
PA Phase I	37.5	44.4	18.1	72
PA Phase I-W	24.4	53.3	22.2	45
PA Phase II	43.5	47.1	9.4	85
PA Phase III	30.0	54.3	14.8	210
PA Phase III-W	20.9	60.5	18.6	43
PA Phase III-E	32.3	52.7	13.8	167
CSB Phase I	35.6	49.2	13.6	59
CSB Phase I Feature 4	13.5	73.0	13.5	148
CSB Phase II	44.8	49.1	6.0	116
CSB Phase II Feature 4	49.2	39.8	10.9	256
MP Phase I	27.9	50.8	19.7	61
1720-1740				
PA Phase IV	35.4	49.1	15.0	568
PA Phase IV-1-W	34.3	55.2	7.5	67
PA Phase IV-3-W	25.6	52.4	22.0	164
PA Phase IV-3-E	42.3	45.2	12.2	312
CSB Phase III	32.4	45.5	20.7	145
1760-1810				
PA Phase VII	26.1	56.5	17.4	69
PA Phase VII-E	25.4	58.2	16.4	67
CSB Phase IV	34.3	47.1	14.3	70
MP Phase III	37.9	44.8	17.2	29
MP Phase IIIa	31.8	62.6	5.6	107
MP Phase IV	22.9	54.3	22.9	70
MP Phase V	24.3	54.4	21.4	103
ca. 1790 Narbonne House	51.4	34.6	14.0	107
ca. 1805 Narbonne House	38.8	52.0	9.2	415

Note: PA=Paddy's Alley; CSB=Cross Street Back Lot; MP=Mill Pond. "Normal" indicates approximate normal distribution of skeletal elements.

make up a slightly larger percentage, ranging from 14-23% of the body part NISP's, indicating that veal body parts were relatively important even at this early date.

1720-1740

In these decades veal increased in importance, increasing from an average of 12-16% to 20-28% of the NISP's. In these assemblages calf heads range in importance from 10-20%, but when considered together with the adult-sized remains range in importance from 21-43%, most falling just slightly more than in a normal distribution. Feet, considering calf and cattle together, run consistently less than a normal distribution. In no instance are there enough elements to suggest that feet were commonly available. So consistent is this pattern, that it is tempting to suggest that cattle and calves were not raised in town for consumption as beef and veal, and households did not obtain them as entire carcasses. Beef and veal were probably obtained, even at this early period in Boston's development, as cuts of meat, or possibly quarters with the feet generally removed.

Body parts, considering both calf and adult-sized remains, ranged from roughly similar normal distributions to substantially more (45-61%). As in the earlier decades veal forequarters and hindquarters were more important than calf heads and feet. Adult-sized cattle remains, or beef, show that body parts continued to be important, as they are present in normal or greater than normal proportions.

1760-1810

With the exception of MP Phase III, veal continued to increase in importance, with figures ranging from 28-33% of the cattle NISP's. Looking closer at the data, calf heads appear to increase. Calf heads were considered a delicacy in Europe during the eighteenth and early nineteenth centuries; one wonders if the faunal data identifies when they became a desirable cut of meat in Boston (Bowen 1993). Calf feet continue to be present, but in less than normal proportions.

The data for adult-sized heads show a general decrease in several assemblages. Evidence gathered from a contemporary site, the Narbonne House in Salem, Massachusetts, shows a similar pattern that was to become increasingly apparent as the nineteenth century progressed. As with heads, foot elements in many instances are present in less than normal proportions.

Even in the eighteenth century health laws began to require butchers to dispose of feet and other waste parts from their stalls (Marten 1980). Signs of the control of these waste parts become even clearer. In 1841 feet were sold for oil and glue, and heads were boiled and fed to swine (Colman 1841:77). Heads could also be sold to Poor Houses, from which they could get four to five pounds of clear meat from each head. Afterwards they were boiled for the extraction of tallow, then fed to swine. After being picked over by swine, the bones were gathered up and sold to the sugar boilers for the purpose of making animal carbon for the refining of sugar. Some jaw bones were sold to button makers, and the feet to those who made oil (Colman 1839:73).

The long bone data for this period show that veal continued to be an important food. In Paddy's Alley VII they made up only 19% of the NISP for long bones, but in the Cross Street Back Lot and Mill Pond III they made up 39% and 41.7% of the NISP for long bones, respectively. Considering the veal and adult-sized long bones together, it is apparent that beef long bone cuts continued to be important, as is evidenced in the greater than normal numbers of long bones.

Butchering and Cuts of Meat

Although every zooarchaeologist must deal with butchery on a daily basis when analyzing faunal remains, few have dealt with butchery-related problems in print. With the notable exceptions of Lyman (1987), Kenyon (1992), Otto (1984), and Crader (1992), zooarchaeologists have tended to leave their observations as a laboratory function. Yet butchering data holds fascinating information on the transformation in foodways that occurred during the late eighteenth and early nineteenth centuries, along with the commercialization and industrialization of food production, distribution, processing, and consumption of foods.

In working with a mixture of seventeenth-, eighteenth-, and early nineteenth-century faunal remains, it has become apparent that a fundamental change occurred in butchering techniques. In recent years, as assemblages came into our lab for analysis we worked closely with the archaeologists to establish tightly dated assemblages. Our goal was to maintain archaeological integrity, but create the largest possible assemblage for statistical purposes. We worked together, pulling small tightly-dated assemblages from privies and trash pits that would be analyzed separately as distinct units, but also combining several small assemblages into macro-assemblages capable of producing reliable kill-off patterns and relative dietary estimates. Through this sometimes tedious archaeological analysis we have had the opportunity to observe when the butchering technique shifted from chopping to sawing and to formulate ideas on how and why this change occurred.

Working in the 1970s, before most historic zooarchaeologists had much interest in butchering, John Otto (1984) noted the different butchering techniques, interpreting them as status-related. Observing chopped bones in the slave and poor white assemblages excavated from Cannon's Point Plantation in South Carolina and sawn bones in the white owner's assemblage, he claimed that chopped bone was proof that slaves and poor whites cooked one-pot meals, while owners roasted the more highly valued—or sawn—roasts. As he reported, Vernon Baker (1980) and James Deetz (1977) also found chopped bone on slave sites, even though both these sites dated to earlier time periods. When Otto made this interpretation, he incorporated little of what was known about the differential preservation of different types of bone. Interpretively speaking, anything went. Since then, much more has been written on site formation processes, taphonomy, and the range of natural and cultural processes that modify bone. Looking back on his work, we can see that explanations of patterns he saw in the archaeological record were creative but naively simplistic.

Otto observed the differential presence of chopped and sawn bone, and interpreted the differences to be related to rank. This is a fascinating observation worthy of some deeper thought, for he is quite possibly right that during this time period wealth differences determine what butchering method was used. However, the reasons why this was so must be rethought. Why on a plantation, where slaves and overseers did or supervised the work, did they get only chopped meat, but their masters obtain sawn meat? Could it be that the sawn meat was procured from some source outside the plantation?

From an historical point of view, Otto's interpretation of these techniques as status-related does not hold up, for bones found in every seventeenth- and eighteenth-century site are all chopped, regardless of the status or ethnic affiliation of the household associated with the site. Sawn bones do sometimes appear in these early assemblages, but invariably they come from disturbed or mixed archaeological contexts. The only sawn bones we have seen in early archaeological contexts were not food remains, but rather a deer antler and scapulae with round holes punched through the blade. Saws were present very early, but apparently they were used in making tools, not processing meat.

Our experience has shown us that the earliest sawn food remains appear in urban sites. In an assemblage dating to the turn of the nineteenth century, the Narbonne House in Salem, Massachusetts, are sawn veal bones (Bowen 1982). In every nineteenth-century faunal assemblage are sawn bones, mixed in varying proportions with chopped bone. It appears that in the nineteenth century saws were increasingly used to butcher meat. The Harpers Ferry faunal assemblages, for example, show us that large cattle bones are most frequently sawn, but occasionally pig and sheep/goat bones are sawn (Burk 1992, 1993; Bowen and Manning 1993). Furthermore, early nineteenth-century bones are sawn into cuts much like much the large cuts common during the previous century, but that over the century meat cuts decreased into smaller pieces closely resembling the thin steaks and chops we find in the grocery stores today (Bowen and Manning 1993).

Documentary sources, although they do not provide any specific description of what, how, or why saws were adopted, in general back up the archaeological record. In the seventeenth century, for example, Diderot (1978) depicted butchers with cleavers, knives, and broad axes, but no saws. Drawing of markets and butcher shops from eighteenth-century London show broad axes and cleavers, not saws. New England documentation seems to confirm the use of chopping instruments, as is evidenced in James Lewis' description of mid-eighteenth century probate inventories from Salem, Massachusetts. James Ballard, for example, died at the age of 37, owning two axes, a cleaver, and a hatchet (Lewis 1984:171-172).

Saws begin to appear only during the late eighteenth century or early nineteenth century. The earliest evidence of a saw is a 1799 drawing of Philadelphia, where a butcher is holding a saw. Other evidence comes from England, where William Henry Pyne reported in 1806 that in London "even our butchers use the saw" (Pyne 1806: reprinted in 1971:57). Later in the century, in 1846 in New York, Edward Hazen wrote that:

> *In large cities and towns, the meat is chiefly sold in the market-house, where each butcher has a stall rented from the corporation. It is carried there in a cart, and cut into suitable pieces with a saw, knife, and a broad iron cleaver (Hazen 1846:57).*

That both instruments continued to be used throughout the nineteenth century by even the professional butcher is indicated by E. Knight's *Knight's American Mechanical Dictionary*, where he lists meat-saws and metacarpal saws along with the cleaver, butcher knife, and cleaving knife (Knight 1875:1233, 2035). McArthur, Wirth, and Company's catalogue on butchers' supplies show that even in 1900 cleavers, referred to as packing house pork cleavers, beef splitters, market cleavers, and lamb cleavers, were advertised along with saws, of which he lists the specialized types—the high flat steel back for use on heavy beef, the pork packers saws, and dehorning saws. Each had a distinctively different shape (McArthur, Wirth, and Co. 1900:27-30).

Even though trade catalogues show that cleavers were sold to butchers until the turn of the twentieth century, and U.S. Department of Agricultural Bulletins show that home producers used saws, cleavers, and axes until the early twentieth century, the archaeological record indicates that as the nineteenth century progressed the saw became increasingly common, at some point completely replacing the chopping instrument as a professional butchering tool (Boss 1903; Ashbrook and Anthony 1917). More documentary research will one day help identify the progression and eventual eclipse of chopping instruments as a butchering tool used by commercial establishments in this country. Determining when home butchers began to use saws will be even more difficult. By the late 1940's the U.S. Department of Agriculture Bulletins have dropped the cleaver as part of the butcher's tool kit, leading us to conclude that by this time most home butchers had switched to the more modern methods (Warner 1949). But even in very rural areas of the South, Mid-Atlantic and Northeast home butchers still use axes like their fathers and grandfathers did.

Henry Stephens, writing in the United States during the mid-nineteenth century, supplies us with some ideas on how and why the change took place:

> *After the carcass (cow) has hung 24 hours, it should be cut down by the backbone, or chine, into two sides. This is done either with the saw or chopper—the saw making the neatest job in the hands of an inexperienced butcher, though the most laborious; and it is the quickest with the chopper, but by no means the neatest plan, especially in the hands of a careless fellow (Stephens 1851:693).*

It appears that at least one reason for the differential presence of chopped and sawn bone lies in the commercialization of butchering, not simply the ethnic affiliation or status of the household. Butchering techniques were changed by professional butchers working in a highly commercialized meat production and distribution system. Possibly the extensive West Indian market for meat provisions, or possibly the large market for military salted provisions during the Revolutionary War, prompted the shift to saws. Whatever the vehicle for these changes was, the association of sawing with commercialized butchering in the United States is clear.

Charles Cheek's observation that sawn bones were associated with late nineteenth- and early twentieth-century blacks, while chopped bones were associated with white immigrant German populations living in Washington, D.C. (Cheek and Friedlander 1990; Cheek, personal communciation, 1994) supports this thesis, since today European butchers still use hatchets, cleavers, and chopping tools for butchery. German immigrants no doubt brought their butchering skills with them.

The butchering technique must be viewed in context of the provisioning system in which the archaeological site's occupants lived. If one is excavating a rural site occupied by farmers practicing subsistence-oriented agriculture, one might expect chopping tools to have been used. But if a nineteenth-century archaeological site is located in a highly developed commercial center such as Boston or New York City, one might expect to find large numbers of sawn bone.

The Paddy's Alley, Cross Street Back Lot, and Mill Pond faunal remains, which include assemblages dating to from the late seventeenth- on through the early nineteenth-centuries, record the beginnings of the transformation that occurred in butchering techniques. Almost without exception, bones dating to the late seventeenth and most of the eighteenth century were all chopped. Less than a handful of sawn bones were found in these assemblages, and when archaeologists were consulted, in every case there was a distinct possibility of contamination and/or infiltrated remains. We can therefore say with absolutely no equivocation that up until the late eighteenth century only axes, cleavers, knives, and other chopping-type tools were used. In Mill Pond Phases IIIa and IV, dating to the closing decades of the eighteenth and early nineteenth century, however, some sawn bones were present. No contamination was noted in these contexts, giving us clear evidence of the beginnings of the change in butchering technology in Boston.

As we identified the bones and recorded the type of butchering present on each bone fragment, we had the opportunity to observe the type and number of bones which were chopped or sawn. What immediately jumped out was the fact that there were a few sawn bones from the two latest assemblages, Mill Pond IIIa (ca. 1795) and Mill Pond IV (ca. 1806-1809). Even more interesting was the fact that every sawn bone, with the exception of two, were adult-sized cattle remains. The others were adult-sized caprine long bones.

Although there are still many unanswered questions, some facts are clear. Bowen and Manning's analysis of the Harpers Ferry faunal material dating to the early and late nineteenth century showed that the mix of chopping and sawing that was apparently the product of the local provisioning system (Bowen and Manning 1993). Here, like in the Boston faunal remains, it was the cattle remains that were more commonly sawn. In this small town, residents kept pigs on a regular basis, and sometimes a dairy cow. Depending on a family's resources and occupation, most also depended on commercially produced meats. Documentary references indicate beef was one of the most important meats sold by grocers and professional butchers. Not surprisingly, archaeological cattle remains are mostly sawn, while pig, sheep, deer, and calf remains were more commonly chopped. This butchery evidence denotes a highly organized system of butchery for adult cows, with alternate methods utilized for other domestic mammals.

A similar transformation of butchering techniques was no doubt occurring in Boston, just as it was in Harpers Ferry, indeed throughout the United States. Some attempt will be made at interpreting why cattle carcasses were the earliest to be butchered with saws in the conclusion. However, since there are so few sawn bones this interpretation of butchery from the Boston faunal remains must remain highly tentative. It is hoped, however, that these observations will encourage archaeologists to excavate more nineteenth-century sites and provide funding for analyzing faunal remains found on these sites.

The meticulous effort to create assemblages with as tight a date as possible improved our ability to see how cuts of meat have changed over time. Since the early the 1970s it has been apparent that over time meat cuts became smaller (Bowen 1976). In his famous book, *In Small Things Forgotten*, James Deetz interpreted this shift to be part of a cultural change from a more organic, corporate organization to a more individual focus. In the late eighteenth and early nineteenth century, meals no longer consisted of large cuts of meat that could be roasted and served in shared trenchers. As time went on they increasingly consisted of sawn meats cut into individual portions. With these changes came a plate and a piece of meat for every diner (Deetz 1977:124-125). Though this progression had its early origins during the late eighteenth century, faunal evidence shows the transformation in butchering techniques and cuts of meat occurred mostly during the nineteenth century.

Gradually cuts of meat became "sanitized," losing any resemblance to the live animal. Gone from the butchers' shops were heads and feet; even meat cuts lost any resemblance to the natural bone. Classically, chopping followed the internal structure of the mammalian skeleton, so that even stress breaks tended to follow natural contours. Saws, on the other hand, had their own agenda and strength, and butchers used them to slice through joints, long bones, and compact bones to produce "neat" individual portions, so much so that today only the most skeletally-aware urban consumer can distinguish the fragment of bone imbedded in a ham or roast. This technique also removed the last vestige of the live animal from the dinner table—bone chips that had been the by-product of the chopping technique were gone. No longer did diners have to either consume chips, or extract them from their mouths.

Further research into how and when butchering techniques changed to saws will help identify when and how the change occurred. Clearly the early association of sawing with beef remains, and the clear association of the traditional hacking techniques with veal calves, mutton, pork, and venison, needs to be further explored. For now it is easiest to interpret sawing as an outgrowth of the commercialization of the meat processing industry in this country, where professional butchers adopted the saw to cut up the bulky cattle carcass.

However, it is impossible to claim that during the nineteenth century saws were used exclusively by professional butchers trained in the United States and axes/cleavers were exclusively used by home-producers. The situation is clearly more complex. Early in the century both home-producers and professional butchers used the chopping technique to butcher the smaller animals. Immigrant butchers no doubt continued to butcher using techniques used in their Mother country, even in this century. What does seem clear is that the professional butcher in this country abandoned the cleaver/axe for the saw, so that by the end of the nineteenth century the chopping technique became more commonly used by home-producers than the professional butcher. And today, one still finds home-producers living in rural locations chopping rather than sawing. Having seen a Georgia farmer chop up a pig in eight minutes flat, Bowen can attest to the simple elegance of the axe.

What we can say is that chopping tools were used by both home-producers and professional butchers throughout much of the nineteenth century. At some point many professional butchers dropped the axe to take up the saw for even the smaller animals. Alternatively, the appearance of sawn cattle bones in the Mill Pond faunal assemblages dating to the late eighteenth century attests to yet another measure of food processing activities that were being influenced by commercialization and the increased centralization of food-related activities.

For the Paddy's Alley and Cross Street Back Lot faunal assemblages, the butchering analysis was completed when the faunal remains were first laid out for the Minimum Number of Individual determinations. Unfortunately, bones were organized into assemblages that were later reformed by Cook and Balicki into those presented in this report. Thus, the assemblage groupings in this analysis differ slightly from the final ones, although the general patterns are still clear.

As bones were identified, the location of chop marks were noted, along with natural modiffications such as carnivore chewing, modifications caused by non-specific agents or natural processes. Over the years, as we have analyzed bones, we have closely scrutinized marks on the bones, plus reconstructed fresh breaks, and conducted experiments to replicate many of these cuts. By doing so, our confidence in recognizing butcher marks soared, allowing us to identify some modifications as the result of butchering rather than some agent other than man.

The data reflects these observations. Each bone was recorded and the location of modifications marked on drawings. Once completed, they have been collated (see Appendix D), showing the realtive abundance of different portions of the carcass.

While informative, this approach is time consuming. Given time constraints, we chose to do the earliest assembalges (Paddy's Alley Phase I and Cross Street Back Lot Phases I and II), along with the largest assemblage (Paddy's Alley Phase IV). The raw data exists for the other assemblages and will be supplied upon request. With the second phase of this project, analyzing the Mill Pond faunal remains, funds were not available to complete either the bone illustrations or produce collated butchery data. However, raw data exists for all assemblages, either in the form of individual drawings or in code form on the computer files. Any and all data will be supplied upon request.

Cattle, Swine, and Caprines

All the bones from swine and caprines are chopped into similar forms as found on cattle bones, leading us to believe the approach to butchering pig and sheep heads was similar to butchering cattle heads. One major difference, however, is that long bones tended to be more complete, not a surprising fact when their relatively small size is considered. Given the fundamental similarity in approach to butchering, descriptions are generalized, with exceptions noted.

Heads

There is no doubt the heads of all the large mammals had been butchered. All cranial bones have been chopped, even cattle from the more recent assemblages. The crania were chopped, generally with an eye towards splitting them in half, although Cross Street Back Lot Phase I cattle crania have more transverse cuts, rather than along the axis. One cut, referred to as the "ox cheek," with an axial cut through the maxilla and on the other side of the cheek teeth, was found in Paddy's Alley Phase IV. There are clear, unrefutable butcher marks on two separate bone fragments. Mandibles tended to be butchered perpendicular to the axis through the diastema, another cut both proximal and distal to the cheek teeth. The ascending ramus was generally severed at the angle as well.

Vertebrae

A medieval form of butchering is to cut transversely through the centrum and main body of vertebrae (Maltby 1979). These bones exhibit the more modern method of butchering the carcass into two halves. Generally speaking, vertebrae were split with an axe or cleaver longitudinally along the axis, either in dead center or along either side of the centrum. Vertebrae fragments are not shown in Appendix D, but the raw data is available upon request.

Scapulae

All scapulae were chopped, including cattle remains from the more recent assemblages. Generally, the cut is on either end of the bone, either through the glenoid and neck, or through the blade itself. Breakage in the blade was frequent, usually the result from stress breaks. The flat bone in the blade is fragile compared to compact bone, and it is therefore subject to more stress breaks than other bone. The goal of these two cuts seems to have been two fold—first to sever the shoulder from the leg, and secondly to bisect the shoulder itself.

Long Bones

Humeri, radii, ulnae, femora, and tibiae were all butchered using chopping tools in several locations. Generally speaking the goal seems to have been to separate joints but not always through the epiphyses where connective tissue makes this task a relatively easy job. More often the cut is made distal to the proximal epiphyses, through the compact bone of the shaft, or proximal to the distal epiphyses through the compact bone of the shaft. Frequently too, the long bone is severed mid-shaft. Experiments conducts by students and staff members working in Colonial Williamsburg's Department of Archaeological Research have demonstrated the ease with which this cut can be made. Two hits of a cleaver are enough to snap the long bone in two; one well-aimed hit of an axe will snap a joint to two These cuts are part of the primary butchering process—not simply cuts made by those seeking to release marrow from inside the shaft.

Some of the cattle remains from the more recent assemblage, Mill Pond IIIa, have been sawn. Technically, these cuts appear to have been made by mechanical saws, as each has a hinge or hinge scar left on the edge of the long bone (Kenyon 1990). Generally speaking, the placement of the cuts were similar to those of the chopped bone. Two femora have been cut into round steaks about four inches thick. Some "round steaks" are much narrower, measuring only ¾" and 1¼" each. One last femur from Mill Pond III was a distal fragment, sawn just proximal to the epiphysis.

The only sawn caprine bones include one humerus, which was sawn transversely through the distal epiphysis, and a femur which was sawn through the mid-shaft to create a 1¾" cut out of a leg of mutton.

Innominates

Innominates were chopped as were the other elements. Like the scapulae, these bones are vulnerable to breakage. Soft cancellous bone covered by a thin layer of compact bone are the easy target of dogs and feet once butchered. By viewing the innominates as a group, it is evident they were always butchered, generally on either side of the acetabulum, through the ilium, ischium, and sometimes the pubis. In Mill Pond IIIa adult-sized cattle innominates were also sawn to create a cut identical to those that had been chopped. In one the acetabulum was left intact, with saw cuts through the ilium and ischium.

Lower Leg

Metapodials were also butchered. Some were complete, but most had beenchopped through the shaft, generally towards the distal epiphysis. Tarsals and carpals were sometimes chopped, probably the result of severing the feet from the leg.

Calves

Heads

Immature mammals are recognized, in part, by a particularly soft grainy bone. The cranium, with its characteristic bone not yet fused at suture line, is particularly susceptible to breakage; the different bones in the cranium will fall apart even with cooking. Stress breaks are much more frequent than on more mature bone. Consequently, butcher marks are much harder to recognize. The mandibles, on the other hand, do exhibit butcher marks in very similar locations to the adult-sized mandibles.

Other

Scapulae, long bones, innominates, and metapodials all exhibit butcher marks similar to those found on the adult sized remains. These have been discussed in the previous section.

Conclusion
The Consumption of Meat

The plain character of the American diet has deep roots. In England, by the seventeenth century wildlife had become a food of the rich. Fish were never a food of choice. Bound by English tradition, early colonists established an agricultural system that allowed them to recreate, in a surprisingly short time, a diet very much resembling what they had known in Britain. They retained their love of beef. Cattle thrived in this new environment (as did swine), and within a few decades after initial settlement, there was enough beef to supply dietary needs, even enough that colonists could sell cattle to incoming immigrants (Rutman 1967; Bailyn 1955).

Beef became, as it had been in England, the meat of choice, and throughout the colonial period it remained so (Drummond 1939; Maltby 1979; Bowen 1990a). Mutton, fowl, fish, and other wildlife provided additional sources of fresh meat. Pork was very important as it provided an essential year-round source of preserved meat. Dairy products, in the form of milk, butter, cream, and cheeses, remained a significant source of protein for many, and vegetables accompanied meats in the form of salads, pies, and stews (Drummond 1939; Mennell 1985; Wilson 1974). Grains were present in the form of breads, pies, cakes, and porridge. As noted by Alice Ross (1993:50):

> *Like most northern cuisines, American cookery was heavy in fats and light on spices. Generally speaking, the cuisine was based on plain, wholesome farm products, highlighted by an occasional, exotic echo from the far-flung British ports.*

Analysis of patterns seen in all 44 Paddy's Alley/Cross Street/Mill Pond assemblages, in terms of the relative abundance of fish, birds, and the major domestic mammals, including cattle, pigs, and caprines, show a great similarity with what is historically known about the English and early American diet. Overall, there is a general sense of sameness throughout the century. Beef, particularly when considered along with veal, was without exception the most important. Mutton followed second in almost every instance, surprisingly taking the lead over pork even as early as the late seventeenth century. As was common in Britain and throughout the eastern North American seaboard in British colonies, domestic fowl, fish and other wildlife followed as supplemental foods.

Given the parameters of Boston's regionally-based provisioning system and the increasing centralization of meat distribution in the city, what can be said about consumption patterns of different households occupying the Paddy's Alley/Cross Street Back Lot/Mill Pond sites from the late seventeenth, through the eighteenth, and into the first decade of the nineteenth century?

The picture that the documentary records provide is one of a traditional system undergoing change. Faunal remains support this view, showing us the ways in which a traditional face-to-face system had begun to develop a market-orientation and to centralize some aspects of food distribution within the city. If assemblages had been combined into large aggregates this change would not have been visible, but fortunately the fine-grained archaeological analysis permitted the formation of a series of smaller, but tightly dated assemblages. Although some of the data is not as robust as we would like, by keeping the weaker kill-off patterns and element distributions strictly in perspective with the stronger, it has been possible to provide a measure of the extent to which the growing urban population exerted enough pressure on the traditional agricultural system to produce change.

Our evidence shows that although much of the small-scale system remained intact throughout the eighteenth century, by as early as the 1730s change was clearly underway. Individuals still kept some livestock, most products reaching the city were primarily surpluses produced with subsistence-oriented agriculture, and the market system still relied on face-to-face relations with the producer. But, fewer and fewer livestock were kept in town and individuals became increasingly dependent upon market foods. Boston's growing population, which resulted in an ever-increasing demand on rural production, brought an influx of greater amounts of food, and the centralization of the slaughter and distribution of meats and animal products in the city. Fishermen responded by bringing in fresh fish. Farmers responded by adopting more aggressive, commercially-focused husbandry techniques to produce foods for market, and market-wise, middlemen were taking an increasingly important role in the distribution of foods as farmers came to depend on them to sell their produce.

Historical documentation provided evidence for increased cattle and sheep production by farmers, and in town evidence of decreased home production of livestock and the increased centralization of several aspects of food distribution. But the faunal evidence has provided some additional evidence of when and how the system began to specialize.

Leaving aside our common assumption that urbanization should affect all aspects of food provisioning, we have examined the variety of ways in which the development of large-scale market systems impact faunal remains. In examining all forms of faunal evidence, we have discovered that pig production remained grounded in traditional methods probably longer than any other aspect of the provisioning system. The distribution and sale of meat and animal products increasingly came under municipal control, but our faunal evidence indicates the system remained open, at least relative to our modern expectations. Heads and feet of even the commercially-produced and marketed animals, for example, remained available throughout the century.

But some things did change, as seen in the response of fisheries to the growing demand much earlier than has been presumed. As early as the 1720s there is evidence of a greater specialization in cattle production. In the NISPs, age data, and element distributions the increased presence of veal is apparent. Kill-off data and element distributions for caprines also indicate change is underway and that sheep have become a focus of rural market production. Wool production became increasingly important in New England, and as the number of sheep rose, more sheep past their prime were sent to market. This is probably why caprines eclipse swine as a meat source. Additional evidence for the increasing market for mutton is the gradual increase in younger animals.

Evidence of the centralization of Boston's provisioning system can be found in the element distributions. Cattle body parts appear more commonly than heads or feet throughout the century, but the slight decrease in proportion later in the century show hints of change. A last bit of supporting evidence is found in the element distribution for caprines, which show a disproportionate number of body parts to heads and feet. Surely mutton was almost always purchased rather than sheep raised and slaughtered.

How did these changes affect the availability, and therefore the diets of the three sites' occupants? Documentary records indicate that the households occupying the Paddy's Alley/Cross Street/Mill Pond sites were generally artisans or tenants. Patterns seen in the faunal data do not by any means contradict this interpretation, but unfortunately there is little in the way of comparative evidence of tightly dated assemblages for the first half of the eighteenth century. Determining rank-related consumption patterns at this point in time is not possible.

Historic archaeologists have tended to jump into explanations of dietary differences, referring only to the household's ethnic affiliation or social and economic status to explain the choice of what foods to purchase and consume (Bowen 1987, 1993). In urban areas diet is seen as dependent upon the household's resources; households, it is assumed, could purchase anything within the range of foods acceptable to European cultures. Wealthy individuals tended to purchase the more expensive meaty cuts such as roasts and hams, while poorer households tended to purchase what they could afford, primarily bony cuts of lesser quality.

We suggest that status and ethnic related differences no doubt existed, but the first place to look is the provisioning system itself. It is possible to make some tentative interpretations regarding market-related dietary patterns.

PORK

Relative element distributions, which show that all portions of the pig carcass are well represented, indicate that the entire pig carcass was available, lending support to the historical evidence that indicates pigs were commonly present in town throughout the eighteenth century. There is some evidence that through time more pork was purchased from butchers or middlemen, rather than raised, since fewer feet are present in the later assemblages than in those dating to the earlier decades of the eighteenth century.

MUTTON

Relative element distributions indicate from the earliest years a tendency to purchase mutton, rather than produce and slaughter it near the site. Relative to pork, early on there are proportionately many more body parts than heads or feet.

Here is evidence that a certain aversion to lifelike parts of the animal had already begun by 1700. In postmedieval Britain there developed an aversion to parts of the animal appearing more lifelike than others—the heads and feet most notably that accompanied major changes in European society (Mennell 1985). Medieval banquets displayed complete animals in lifelike form, but beginning in a period when the upper and middle class could more easily afford imported spices, the elite redefined haute cuisine to focus on common meats fixed in fancy ways. At the same time cities were becoming crowded with people moving in from the countryside. Those living in the cities, who lost their direct ties to livestock and the business of slaughtering and butchering, developed an aversion to parts reminding them of the live animal.

There is comparative evidence to support this statement that the aversion was first played out with caprines. These parts are completely absent in the Narbonne House faunal assemblages, in a context of an urban consumer. On the other hand, a butcher's refuse pit dating to the 1740s in Williamsburg, Virginia contained tremendously large numbers of sheep heads (85% of all caprine NISP's).

Documentary evidence backs up this interpretation. Robert Gross (personal communication, 1993) observed this aversion to sheep heads was present in colonial New England. This aversion found its way into Boston's municipal laws as well, as health regulations passed during the last half of the century restricted the display of mutton and lambs with their feet. No regulations referring to restrictions on swine heads have been located (Bowen 1993).

BEEF

As with pigs, all portions of cattle carcasses are well represented, indicating (from zooarchaeological evidence) that a relatively small-scale provisioning system was in place throughout the eighteenth century. Individuals could maintain cows in town, if they had sufficient resources to afford it. Boston had yet to restrict the use and/or disposal of either the heads or feet. Thus, it is no surprise that both the heads and feet of cattle and calves are present in every assemblage.

However, evidence of saws found almost exclusively on cattle bone demonstrates the market-orientation of beef production and distribution. Further, if one looks closely at the changing proportions of heads, body parts, and feet in the various assemblages, some change becomes apparent, particularly if one peeks ahead into the nineteenth century. By comparing data taken from the analysis of the ca. 1805 Narbonne House and the ca. 1830s African Meeting House assemblages, the progression towards the diminished presence of cattle heads at least in the Paddy's Alley and Mill Pond faunal materials can be glimpsed. Adult-sized head elements diminish from 48% and 60.3% in Paddy's Alley Phases I and II, to 31.3% and 37.8% in Paddy's Alley Phases III and IV. Data from Phases V and VI should be dismissed, since the NISP are only 20% and 4%, respectively. But in Phase VII, which dates from 1760 to 1790, the head elements decrease to 23.4%. Head elements drop even lower in the late eighteenth and early nineteenth century Mill Pond faunal data. Here adult-sized head elements drop to 18.2% and 19.3% of the total NISP.

Feet, like heads, are well represented in all assemblages. They are usually present in less than normal proportions, and in some cases are virtually absent, but, unlike heads, there is no directional tendency. If we remind ourselves that as early as the 1690s butchers Boston selectmen were calling for butchers to remove themselves and their slaughtering activities to the outskirts of town, we must wonder if this is the result of marketing practices that began as early as the late seventeenth century.

But the picture for the Cross Street Back Lot assemblages, which shows a large preponderance of cattle heads, reminds us that variability in the acquisition of certain cuts of meat was surely present. In CSB Phase I there are relatively few heads, while in CSB Phase II there are many heads. Possibly heads were particularly desired by the household disposing of their food remains; they might have obtained them from the nearby slaughter house. Perhaps too some slaughter waste may have found its way into this privy. What is clear is that heads were available at the turn of the seventeenth century. Variability related to household differences can now be explored.

VEAL

As dairying increased in New England veal became more readily available at the market place. It might possibly even have dropped in price. Consumption by the Paddy's Alley/Cross Street Back Lot/Mill Pond inhabitants increased as the century progressed. Here, evidence of element distributions show, even more clearly than with beef, that veal calves were marketed. From a very early period it is clear that veal was purchased in individual pieces. It is also clear that as the decades passed heads became increasingly more important, providing slim but important evidence that individual choice played an important role in urban consumption patterns.

THE CONSUMPTION OF MEAT

In conclusion, assemblages such as those analyzed for this report contain important information on the changes in foodways that occurred over a century when Boston's provisioning system was evolving from a small face-to-face market system into one driven by middlemen and controlled by municipal regulations. By working with a general outline of developments derived from various secondary and primary sources and examining them in light of the faunal evidence, we have identifed some of the ways in which Boston's provisioning system influenced the diets of urban consumers.

However, this is merely a beginning. Some of the assemblages are too small to provide definitive evidence, and more details of the market system remain to be filled out. Lastly, a picture of artisan and tenant consumption is now available in the many assemblages analyzed for this project. What remains to be identified is the how these patterns reflect the dietary patterns of the artisan and working families of Boston dependent upon an increasingly centralized market system.

Bibliography

Albion, Robert, William Baker, and Benjamin Labaree
1972 *New England and the Sea*. Wesleyan University Press, Middletown, Connecticut.

Allen, Ira
1798 *Natural and Political History of the State of Vermont*. Reprinted in *Vermont Historical Society Collections* I:327-499.

American Ornithologists' Union
1983 *Check-List of North American Birds*. Sixth edition. American Ornithologists' Union.

Ashbrook, F.G., and G.A. Anthony
1917 *Killing Hogs and Curing Pork*. Farmers' Bulletin 913, U.S. Department of Agriculture. Washington, Government Printing Office.

Bailyn, Bernard
1955 *New England Merchants in the Seventeenth Century*. Harvard University Press, Cambridge.

Baker, Andrew
1989 Personal communication.

Baker, Andrew H., and Holly V. Izard
1991 "New England Farmers and the Marketplace, 1780-1865: A Case Study," In *Agricultural History* 65(3):29-52.

Baker, Vernon
1980 "Archaeological Visibility of Afro-American Culture: An Example from Black Lucy's Garden, Andover, Massachusetts." In *Archaeological Perspectives on Ethnicity in America: Afro-American and Asian American Culture History*, pp. 29-37. Baywood Publishing Company, Farmingdale, New York.

Baker, J., and D. Brothwell
1980 *Animal Diseases in Archaeology*. Academic Press, London.

Balicki, Joseph
1995 Executive Summary: Archaeological Data Recovery, Feature 4, Cross Street Back Lot Site (BOS-HA-13), Boston, Massachusetts. Prepared for Timelines, Inc. and Central Artery Tunnel Project, Bechtel/Parsons Brinckerhoff.

Bent, Arthur Cleveland
1963 *Life Histories of North American Gallinaceous Birds*. Reprint of 1932 Edition. Dover Publications, Inc., New York.

Bidwell, Percy, and John Falconer
1925 *History of Agriculture in the Northern United States 1620-1850*. Peter Smith, New York.

Bigelow, Henry B., and William C. Schroeder
1953 *Fishes of the Gulf of Maine*. Fishery Bulletin of the Fish and Wildlife Service No. 74, Volume 53. Washington, D.C.

Blake, John B.
1959 *Public Health in the Town of Boston 1630-1822*. Harvard University Press, Cambridge.

Blakely, James, and David H. Bade
1985 *The Science of Animal Husbandry*. Fourth Edition. Reston Publishing Company, Inc., Reston, Virginia.

Bonnichsen, Robson, and Marcella Sorg
1989 *Bone Modification*. Orono, Maine, Center for the Study of the First Americans, Institute for Quaternary Studies, University of Maine.

Boserup, Esther
1965 *The Conditions of Agricultural Growth*. Allen and Unwin, London.

Boss, Andrew
1903 *Meat on the Farm: Butchering, Curing, and Keeping*. Farmers' Bulletin No. 183. U.S. Department of Agriculture. Washington, Government Printing Office.

Boston Registry Department
1881-1909 *Reports of the Record Commissioners of the City of Boston*. 39 volumes. Boston.

Bourdillon, Jennifer

1980 "Town Life and Animal Husbandry in the Southampton Area, as Suggested by the Excavated Bones." *Proc. Hants. Field Club Archaeol. Soc.* 36:1818-191.

Bowen, Joanne

1975a "Military Foodways at Fort Pelham: Faunal Analysis." Report submitted to Michael Coe, Yale University, New Haven, Connecticut.

1975 Probate Inventories: An Evaluation from the Perspective of Zooarchaeology and Agricultural History at Mott Farm. *Historical Archaeology* 9:11-26.

1975b The Mott Farm: Zooarchaeology and Colonial New England Foodways. MA Thesis, Anthropology Department, Brown University.

1976 "The Parting Ways Site: A Preliminary Report on Foodways." Unpublished report on file at Plimoth Plantation, Plymouth, MA.

1979 "The Analysis of Faunal Remains from Clifts Plantation" Report submitted to the Robert E. Memorial Association, Inc.

1982 "Faunal Analysis of Two Trash Pits," In *Archaeological Investigations at the Narbonne House*, by Geoffrey P. Moran, Edward Zimmer, & Anne Yentsch. Cultural Resources Management Study No. 6, Salem Maritime National Historic Site, Massachusetts. National Park Service.

1985 "Seasonality: An Agricultural Construct," To be published in *Documentary Archaeology,* edited by Mary C. Beaudry, Cambridge University Press.

1986 "Analysis of the African Meeting House Faunal Remains," In *The African Meeting House, Boston, Massachusetts: Summary Report of Archaeological Excavations*, by Beth Anne Bower.

1987 "Levels of Interpretation in Faunal Analysis: Foodways within a Household, Neighborhood, and Community Context," Paper presented to the Society for Historical Archaeology, Savannah Georgia.

1988 "A Comparative Analysis of the New England and Chesapeake Herding Systems: The Relative Dietary Importance of Beef and Dairy Products," Paper presented to the Society for Historical Archaeology, Baltimore, Maryland.

Bowen, Joanne (cont'd)

1990a *A Study of Seasonality and Subsistence: Eighteenth-Century Suffield, Connecticut.* Ph.D. dissertation, Brown University, Providence, Rhode Island.

1990b "Discovering Colonial Butchering Techniques." Paper presented to the ALHFAM Conference, Providence, Rhode Island.

1992 Foodways in the Eighteenth-Century Chesapeake. Paper presented at the 1992 COVA meeting, Charlottesville, VA.

1993 "Faunal Remains from the House for Families Cellar." Manuscript on file with The Mount Vernon Ladies Association.

1993 Faunal Remains and New England Urban Household Subsistence. In *The Art and Mystery of Historical Archaeology,* edited by A. Yentsch and M. Beaudry. Boca Raton, CRC Press.

1994 "A Comparative Analysis of the New England and Chesapeake Herding Systems." In *The Historic Chesapeake: Archaeological Contributions,* edited by Paul A. Shackel and Barbara J. Little. Smithsonian Museum Press, Washington, DC.

Bowen, Joanne, and Elise Manning

1994 "Harpers Ferry and Bones that Talk: Acquiring Meat in a Changing World." Report on file at the Harpers Ferry National Park, Harpers Ferry, West Virginia.

Bower, Beth Anne

n.d. "The African Meeting House, Boston, Massachusetts: Summary Report of Archaeological Excavations 1975-1986." Manuscript report submitted to the National Park Service by The Museum of Afro-American History, Boston, Massachusetts.

Breitburg, Emanuel

1991 "Verification and Reliability of NISP and MNI Methods of Quantifying Taxonomic Abundance: A View from Historic Site Zooarchaeology." In *Beamers, Bobwhites, and Blue-Points: Tributes to the Career of Paul W. Parmalee,* edited by James Purdue et al., pp. 153-162. Illinois State Museum, Carbondale.

Bridenbaugh, Carl

1966 *Cities in the Wilderness: The First Century of Urban Live in America, 1625-1742.* Oxford University Press, London.

Bridenbaugh, Carl (cont'd)
1974 *Fat Mutton and Liberty of Conscience: Society in Rhode Island 1636-1690.* Brown University Press, Providence.

Brown, Marley R.
1987 *"Among Weighty Friends": The Archaeology and Social History of the Jacob Mott Family, Portsmouth, Rhode Island, 1640-1800.* Ph.D. dissertation, Brown University, Providence.

Bundy, Clarence, Ronald Diggins, and Virgil Christensen
1982 *Livestock and Poultry Production.* Fifth Edition. Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

Burgess, G.H.O., C.L. Cutting, J.A. Lovern, and J.J. Waterman
1967 Fish Handling and Processing. Chemical Publishing Company, Inc.

Burk, Brett
1992 "Troweling, Chopping, and Interpreting: Understanding Butcher Marks from Historic Archaeological Assemblages." Paper presented at the 1992 Society for Historic Archaeology meetings, Kingston, Jamaica.

1993 "Faunal Analysis of the Master Armorer's Assemblages." In *Interdisciplinary Investigations of Domestic Life in Governmnet Block B: Perspectives on Harpers Ferry's Armory and Commercial District*, edited by Paul A. Shackel, pp. 9.1-9.36. Occasional Report No. 6, National Park Service, Washington, D.C.

Chamberlain, E.B.
1960 "Florida Waterfowl Populations, Habitats, and Managements." *Game and Freshwater Fish Commission, Technical Bulletin* 7:1-62.

Chaplin, Raymond E.
1971 *The Study of Animal Bones from Archaeological Sites.* Seminar Press, London.

Chapman, Joseph, and George A. Feldhamer
1982 *Wild Mammals of North America: Biology, Management, and Economics.* The Johns Hopkins University Press, Baltimore.

Cheek, Charles, and Amy Friedlander
1990 Pottery and Pig's Feet: Space, Ethnicity, and Neighborhood in Washington, D.C., 1880-1940. *Historical Archaeology* 24(1):34-40.

Cheek, Charles
1994 Letter to Joanne Bowen on file with the authors.

Child, Lydia
1971 *The Frugal Housewife*. Facsimile of Twelfth Edition, 1832. Carter, Hendee, and Co., Boston.

1833 The American Frugal Housewife. Twelfth edition. Carter, Hendee, and Co., Boston.

Cleland, Charles
1970 "Comparison of the Faunal Remains from French and British Refuse Pits at Fort Michilimackinac: A Study in Changing Subsistence Patterns." *Canadian Historic Sites: Occasional Papers in Archaeology and History* 3:7-23.

Colman, Henry
1837 "Letter to the Farmers of Massachusetts on the Subject of an Agricultural Survey of the State by the Authority of the Legislature." Weeks, Jordan and Co., Boston.

1839 *Second Report of the Agriculture of Massachusetts, County of Berkshire*. Dutton & Wentworth, State Printers, Boston.

1841 *Fourth Report of the Agriculture of Massachusetts, Counties of Franklin & Middlesex*. Dutton & Wentworth, Boston.

Conant, Roger
1975 *A Field Guide to Reptiles and Amphibians of Eastern and Central North America*. Houghton Mifflin Company, Boston.

Cook, Lauren, and Joseph Balicki
1994 Draft Submission, Sections I-V, X, Appendix A, Archaeological Data Recovery: The Paddy's Alley and Cross Street Back Lot Sites (BOS-HA-12/13), Boston, Massachusetts. Report prepared for Timelines, Inc. and the Central Artery Tunnel Project, Boston.

Cottam, C.
1939 *Food Habits of North American Diving Ducks*. U.S. Department of Agriculture, Technical Bulletin.

Crabtree, Pam J.
1990 "Zooarchaeology and Complex Societies: Some Uses of Faunal Analysis for the Study of Trade, Social Status, and Ethnicity." In *Advances in Archaeological Method and Theory*, Vol. 2, edited by Michael B. Schiffer. pp. 155-205. The University of Arizona Press, Tucson.

Crader, Diana
1984 "The Zooarchaeology of the Storehouse and the Dry Well at Monticello." *American Antiquity* 49(3):542-558.

1992 "Slave Diet at Monticello." *American Antiquity* 55(4):690-717.

Cruz-Uribe, Kathryn
1988 "The Use and Meaning of Species Diversity and Richness in Archaeological Faunas." *Journal of Archaeological Science* 15:179-196.

Dandoy, Jeremiah
1994 "Sheep and Goats in the Seventeenth-Century Chesapeake". Report on File at the Department of Archaeological Research, Colonial Williamsburg Foundation.

Davis, Simon
1987 *The Archaeology of Animals.* Yale University Press, New Haven.

Deetz, James
1977 *In Small Things Forgotten: The Archaeology of Early American Life.* Anchor Books, Garden City, New York.

Diderot, Denis
1978 *Diderot Encyclopedia: The Complete Illustration.* Abrams, New York.

Donhof, Clarence H.
1969 *Change in Agriculture in the Northern United States, 1620-1870.* Cambridge University Press, Cambridge.

Douglass, William
1749 *British Settlements in North America.* Two volumes. Second edition. Boston.

Driscoll, Leslie
1995 Parasitological Analysis: Central Artery/Third Harbor Tunnel Project, Boston, Massachusetts. Cross Street—Feature 4. Submitted to Timelines, Inc.

Drummond, J.C., and Anne Wilbraham
1939 *The Englishman's Food: A History of Five Centuries of English Diet.* Jonathan Cape, London.

Ernst, Carl H., and Roger W. Barbour
1972 *Turtles of the United States.* The University of Kentucky, Lexington.

Flyer, V., and J. Gates
1982 Fox and Gray Squirrels, *Sciuris niger, S. carolinensis* and Allies. In *Wild Mammals of North America,* edited by J. Chapman and G. Feldhamer, pp. 209-229. The Johns Hopkins University Press, Baltimore.

Friedman, Karen J.
1973 "Victualling Colonial Boston." *Agricultural History* 42:190-205.

Garrison, J. Ritchie
1987 "Farm Dynamics and Regional Exchange: The Connecticut Valley Beef Trade, 1670-1850." *Agricultural History* 61(3):1-17.

Gifford, Diana
1981 "Taphonomy and Paleoecology: A Critical Review of Archaeology's Sister Disciplines," In *Advances in Archaeological Method and Theory,* Vol. 4, edited by Michael B. Schiffer, pp. 365-438. The University of Arizona Press, Tucson.

Goody, Jack
1982 *Cooking, Cuisine, and Class: A Study in Comparative Sociology.* Cambridge University Press, Cambridge.

Grayson, Donald
1984 *Quantitative Zooarchaeology: Topics in the Analysis of Archaeological Faunas.* Academic Press, Inc., New York.

Gregg, Susan A.
1988 *Foragers and Farmers: Population Interaction and Cultural Expansion in Prehistoric Europe.* University of Chicago Press, Chicago.

Gross, Robert
1993 Personal communication.

Hazen, Edward
1846 *Popular Technology: or, Professions, and Trades.* Vol. I. New York, Harper and Brothers.

Henn, Roselle
1985 "Reconstructing the Urban Foodchain: Advances and Problems in Interpreting Faunal Remains Recovered from Household Deposits." *American Archeology* 5(3):202-209.

Hesselton, W., and R. Hesselton
1982 White-tail Deer, *Odocoileus virginianus.* In *Wild Mammals of North America.* ed. by J. Chapman and G. Feldhamer, pp. 878-901. The Johns Hopkins University Press, Baltimore.

Jensen, Albert C.
1972 *The Cod.* Thomas Y. Crowell Company, New York.

Johnsgard, Paul A.
1975 *North American Game Birds of Upland and Shoreline.* University of Nebraska Press, Lincoln.

Johnson, Edward
1910 *Wonder Working Providence of Sions Saviour in New England (1628-1651).* Edited by J. F. Jameson. New York.

Johnson, Eileen
1985 "Current Developments in Bone Technology." In *Advances in Archaeological Method and Theory*, Vol. 8, edited by Michael B. Schiffer, pp. 157-235. Academic Press, Inc., New York.

Kenyon, Dienje
1992 "Systematic Slaughter: The Butcher's or the Client's Prerogative." Paper presented at the Society of Historic Archaeology Meetings, Kingston, Jamaica.

Klein, Richard, and K. Cruz-Uribe
1984 *The Analysis of Animal Bones from Archaeological Sites.* University of Chicago Press, Chicago.

Knight, Edward H.
1875 *Knight's American Mechanical Dictionary.* Vols. 1-3. New York, J.B. Ford and Co.

Landon, David

1987a "Foodways at the Lowell Boardinghouses: The Historical and Zooarchaeological Evidence." In *Life at the Boarding Houses: A Preliminary Report. Interdisciplinary Investigations of the Boott Mills, Lowell, Massachusetts*, edited by Mary C. Beaudry and Stephen A. Mrozowski, pp. 115-137. Cultural Resources Management Study No. 18. National Park Service.

1987b "Zooarchaeological Remains from the Kirk Street House." In *The Kirk Street Agents' House: Interdisciplinary Investigation of the Boott Mills, Lowell, Massachusetts*, edited by Mary C. Beaudry and Stephen A. Mrozowski, pp. 131-142. Volume II. Cultural Resources Management Study No. 19. National Park Service.

1991 *Zooarchaeology and Urban Foodways: A Case Study from Eastern Massachusetts.* Ph.D. dissertation, Department of Archaeology, Boston University. University of Microfilms International, Ann Arbor.

Lewis, James Hoffman

1984 *Farmers, Craftsmen and Merchants: Changing Economic Organization in Massachusetts, 1730-1775.* Ph.D. dissertation, Department of History, Northwestern University. University Microfilms International, Ann Arbor.

Lippson, A., and L. Moran

1974 *Manual for Identification of Early Developmental Stages of Fishes of the Potomac River Estuary.* Department of Natural Resources.

Lyman, R. Lee

1986 "On the Analysis and Interpretation of Species List Data in Zooarchaeology." *Journal of Ethnobiology* 6(1):67-81.

1987a "On Zooarchaeological Measures of Socioeconomic Position and Cost-Efficient Meat Purchases." *Historical Archaeology* 21(1):58-66.

1987b "Archaeofaunas and Butchery Studies: A Taphonomic Perspective." In *Advances in Archaeological Method and Theory*, edited by Michael B. Schiffer. 10:249-337. Academic Press, New York.

McArthur, Wirth, and Co.

1900 *McArthur, Wirth, & Co. Butchers' and Packers' Tools and Machinery.* Butchers' Supplies, Syracuse, New York.

McClane, A.J.
1978a *McClane's Field Guide to Saltwater Fishes of North America.* Holt, Rinehart and Winston, New York.

1978b *McClane's Field Guide to Freshwater Fishes of North America.* Holt, Rinehart and Winston, New York.

Maltby, J.M.
1979 *Faunal Studies on Urban Sites: The Animal Bones from Exeter 1971-1975.* Sheffield University, Department of Prehistory and Archaeology, Exeter Archaeological Reports 2.

1982 "The Variability of Faunal Samples and their Effects on Ageing Data." *In Ageing and Sexing Animal Bones from Archaeological Sites*, edited by Bob Wilson, Caroline Grigson, and Sebastian Payne. British Archaeological Reports, British Series 109, Oxford, England.

1985 Patterns in Faunal Assemblage Variability. In *Beyond Domestication in Prehistoric Europe*, edited by G. Barker and C. Gamble, pp. 33-74. Academic Press, London.

Marshall, Fiona, and Tom Pilgram
1993 NISP vs. MNI in Quantification of Body-Part Representation. *American Antiquity* 58(2):261-269.

Marten, Cathy
1980 "Foodways Research Project, in Conjunction with Analysis of Archaeological Investigations Conducted on the Site of the African Meeting house, Boston, Massachusetts: A Survey of Available Data," Manuscript on file with the Museum of Afro American History.

Mennell, Stephen
1985 *All Manners of Food: Eating and Taste in England and France from the Middle Ages to the Present.* Basil Blackwell, New York.

Microsoft Encarta
1993 "Lobster." In *Microsoft Encarta* Computer Based Enclycopedia. Microsoft Corporation.

Miller, Henry
1984 *Colonization and Subsistence Change on the 17th-Century Chesapeake Frontier.* Ph.D. dissertation, Department of Anthropology, Michigan State University.

Mudar, Karen
1978 "The Effects of Socio-Cultural Variables on Food Preferences in Early 19th Century Detroit." *The Conference on Historic Site Archaeology Papers* 12:323-91.

National Geographic Society
1983 *Field Guide to the Birds of North America.* National Geographic Society, Washington, DC.

Oliver, Sandra L.
1994 *Saltwater Foodways: New Englanders and their Foods at Sea and at Shore in the Nineteenth Century.* Mystic Seaport Museum, Inc., Mystic, Connecticut.

Otto, John S.
1984 *Cannon's Point Plantation, 1794-1860: Living Conditions and Status Patterns in the Old South.* Academic Press, Inc., New York.

1987 "Livestock-Raising in Early South Carolina, 1670-1700: Prelude to the Rice Plantation Economy." *Agricultural History* 61(4):257-291.

Paradiso, John L., and Ronald M. Nowak
1982 Wolves (*Canis lupus* and Allies). In *Wild Mammals of North America*, edited by J. Chapman and G. Feldhamer, pp. 460-474. The Johns Hopkins University Press, Baltimore.

Payne, Sebastian
1973 "Kill-Off Patterns in Sheep and Goats: The Mandibles from Asvan Kale." *Anatolian Studies* 23:281-303.

Powell, Richard
1990 Personal communication. Williamsburg, Virginia.

Pyne, William Henry
1971 *1806 Microcosm.* Benjamin Blom, Inc., New York.

Reitz, Elizabeth J.
1984 "Urban/Rural Contrasts in Vertebrate Fauna from the Southern Coastal Plain," Paper presented at the Society for Historical Archaeology, Williamsburg, Virginia.

1985 "Vertebrate Fauna and Socio-Economic Status," Paper presented at the Society for Historical Archaeology, Boston.

Reitz, Elizabeth (cont'd)
1987 "Vertebrate Fauna and Socioeconomic Status", In *Consumer Choice in Historical Archaeology*, edited by Suzanne Spencer-Wood, pp. 101-119. Plenum Press, New York.

1988 "Vertebrate Fauna from Eighteenth Century Annapolis, The Calvert House Site." Report on file, Department of Anthropology, University of Georgia.

Reitz, Elizabeth, and Dan Cordier
1983 Use of allometry in zooarchaeological analysis. In *Animals and Archaeology: 2 Shell Middens, Fishes and Birds*, edited by C. Grigson and J. Clutton-Brock, pp. 237-252. London, B.A.R. Series.

Reitz, Elizabeth J., Tyson Gibbs, and Ted A. Rathbun
1985 "Archaeological Evidence for Subsistence on Coastal Plantations." In *The Archaeology of Slavery and Plantation Life*, edited by Theresa Singleton, pp. 163-191. Academic Press, New York.

Reitz, Elizabeth, and Margaret Scarry
1985 *Reconstructing Historic Subsistence with an Example from Sixteenth-Century Spanish Florida*. Special Publication Series, Number 3. The Society for Historical Archaeology.

Rifkin, Jeremy
1992 *Beyond Beef: The Rise and Fall of the Cattle Culture*. Plume Publishers, New York.

Robbins, Chandler S., Bertel Bruun, and Herbert S. Zim
1966 *A Guide to Field Identification: Birds of North America*. Golden Press, New York.

Robins, C. Richard, G. Carleton Ray, and John Douglass
1986 *A Field Guide to Atlantic Coast Fishes of North America*. Houghton Mifflin Company, Boston.

Ross, Alice
1993 "Health and Diet in 19th-Century America: A Food Historian's Point of View." *Historical Archaeology* 27(2):42-56.

Ross, Eric B.
1980 Patterns of Diet and Forces of Production: An Economic and Ecological History of the Ascendance of Beef in the United States Diet." In *Beyond the Myths of Culture: Essays in Cultural Materialism*. Academic Press, New York.

Rothenberg, Winifred
1981 "The Market and Massachusetts Farmers, 1750-1855." *Journal of Economic History* XLI(2):283-314.

Rothschild, Nan
1990 *New York City Neighborhoods: The 18th Century.* Academic Press, San Diego.

Russell, Howard S.
1976 *A Long Deep Furrow: Three Generations of Farming in new England.* University Press of New England, Hanover, New York.

Rutman, Darrett
1967 *Husbandmen of Plymouth; Farms and Villages in the Old Colony, 1620-1692.* Beacon Press, Boston.

Schlebecker, John T.
1976 "Agricultural Markets and Marketing in the North 1774-1777." *Agricultural History* 50(1):21-36.

Schorger, A.W.
1973 *The Passenger Pigeon: Its Natural History and Extinction.* University of Oklahoma Press, Norman.

Schulz, Peter, and Sherri Gust
1983 Faunal Remains and Social Status in 19th Century Sacramento. *Historical Archaeology* 17(1):44-53.

Schumacher, Max George
1975 *The Northern Farmer and His Markets During the Late Colonial Period.* Arno Press, New York.

Shaffer, Brian
1992 Quarter-Inch Screening: Understanding Biases in Recovery of Vertebrate Faunal Remains. *American Antiquity* 57(1):129-136.

Silver, I.A.
1969 "The Aging of Domestic Animals." In *Science in Archaeology*, edited by Don Brothwell and Eric Higgs. Praeger Publishers, New York.

Smith, Billy G.
1981 "The Material Lives of Laboring Philadelphians, 1750 to 1800." *The William and Mary Quarterly* 38:163-201.

Smith, David, and Anne E. Bridges
1982 "The Brighton Market: Feeding Nineteenth-Century Boston." *Agricultural History* 56(1):3-21.

Stephens, Henry
1851 *The Farmer's Guide to Scientific and Practical Agriculture*. Vol. II. Leonard Scott, and Co., New York.

Stewart, R.E.
1962 Waterfowl Populations in the Upper Chesapeake Region. *U.S. Dept. of Interior, Fish, and Wildlife Service, Special Scientific Report: Wildlife* 65:1-208.

United States Department of Agriculture
1851 *Annual Report 1851.*

Warner, K.F.
1949 *Pork on the Farm: Killing, Curing, and Canning*. Farmers' Bulletin NO. 1185. U.S. Department of Agriculture. Government Printing Office, Washington, DC.

Watson, J.P.N.
1978 "The Interpretation of Epiphyseal Fusion Data." In *Research Problems in Zooarchaeology*, edited by D.R. Brothwell, K.D. Thomas, and Juliet Clutton-Brock. Occasional Publication No. 3. London, Institute of Archaeology.

Wetmore, Thomas, and Edward B. Prescott (editors)
1827 *The Charter of the City of Boston, and Ordinances Made and Established by the Mayor, Alderman, and Such Acts of the Legislature of Massachusetts as Relates to the Government of said City*. True and Greene, Boston.

Wetmore, Thomas, and Edward B. Prescott (editors) (cont'd)
1834 *The Charter of the City of Boston, Together with the Accounts of the Legislature Relating to the City*. J.H. Eastburn, Boston.

Wheaton, Barbara
1983 *Savoring the Past: The French Kitchen and Table from 1300 to 1789.* University of Pennsylvania Press, Philadelphia.

White, T.E.
1953 A Method of calculating the dietary percentage of various food animals utilized by aboriginal peoples. *American Antiquity* 18:396-98.

Wilson, Bob, Caroline Grigson, and Sebastian Payne
1982 *Age and Sexing Animal Bones from Archaeological Sites.* BAR British Series 109.

Wilson, C. Anne
1974 *Food and Drink in Britain.* New York, Harper and Row.

Wing, Elizabeth, and Antoinette Brown
1979 *Paleonutrition: Method and Theory in Prehistoric Foodways.* Academic Press, New York.

Wood, William
1865 *Wood's New England Prospect.* Pub. Prince Soc., Vol. III, Boston.

Yentsch, Anne
1992 Gudgeons, Mullet, and Proud Pigs: Historicity, Black Fishing, and Southern Myth. In *The Art and Mystery of Historical Archaeology*, edited by Anne E. Yentsch and Mary C. Beaudry. CRC Press, Boca Raton.

Zeder, Melinda A.
1988 "Understanding Urban Process through the Study of Specialized Subsistence Economy in the Near East." *Journal of Anthropological Archaeology* 7:1-55.

1991 *Feeding Cities: Specialized Animal Economy in the Ancient Near East.* Smithsonian Institution Press, Washington, DC.

APPENDIX A.

ASSEMBLAGES ANALYZED

Table A1.
Central Artery Project
Assemblages Analyzed

Assemblage	Description	Lot(s)	Harris Numbers	Computer Designationn
PA Phase IV-1-E	Ca. 1720-25 Privy (east lot)	4181, 4183, 4205, 4209, 4237	35, 59	72AK-007
PA Phase IV-2	Ca. 1725-1730 Privy	4616, 4619, 4636, 4643	49, 50, 51, 52	72AK-008
PA Phase IV-3-W	Ca. 1730s Occupation (west lot)	4030, 4034, 4037, 4075, 4090, 4101, 4102, 4112, 4144, 4298, 4346, 4520, 4523, 4526, 4530	05	72AK-009
PA Phase IV-3-E	Ca. 1730s Occupation (east lot)	4018, 4138, 4142, 4152, 4153, 4154, 4155, 4159, 4167, 4168, 4176, 4177, 4196, 4197, 4201, 4314, 4332, 4333, 4334, 4427, 4428, 4431, 4432, 4448, 4542	05, 31, 47, 109	72AK-010
PA Phase V	Ca. 1730 Construction of structure	4103, 4311, 4328, 4371, 4500, 4655	30, 53, 58	72AK-E
PA Phase VI	Ca. 1730 Use of structure	4350, 4407	69	72AK-F
PA Phase VII	Ca. 1760-1790 Occupation	4002, 4009, 4024, 4029, 4114, 4133, 4284, 4602	03, 26, 29, 55	72AK-G
PA Phase VII-W	Ca. 1760-1790 Occupation (west lot)	4009, 4602	03, 26	72AK-013
PA Phase VII-E	Ca. 1760-1790 Occupation (east lot)	4002, 4024, 4029, 4114, 4133, 4284	29, 55	72AK-014
PA Phase IX	19th- through 20th-century occupation	4190	12	72AK-H
CSB Phase I	Ca. 1700 Initial occupation	6190, 6192, 6196, 6315	100	72AL-A

Table A1.
Central Artery Project
Assemblages Analyzed

Assemblage	Description	Lot(s)	Harris Numbers	Computer Designationn
CSB Feature 4 Phase I	Ca. 1700 Early use of Feature 4	6426, 6429, 6433, 6446, 6448, 6455, 6481, 6495, 6522, 6525, 6545, 6557, 6575, 6590, 6599, 6616, 6630, 6644, 6652, 6667, 6681, 6686, 6699, 6716, 6725, 6744, 6753, 6763, 6772, 6775, 6781, 6783, 6792, 6797, 6801, 6811, 6818, 6835, 6843, 6850, 6855, 6859	100, 146, 148, 149, 151, 154	72AL-F
CSB Feature 4 Phase I-2	Ca. 1700 Earliest fecal deposition	6811, 6835, 6843, 6850, 6855, 6859	154	72AL-102
CSB Feature 4 Phase I-3	Ca. 1700 Fill cap	6797, 6801, 6818	151	72AL-103
CSB Feature 4 Phase I-5	Ca. 1700 Fecal deposition	6681, 6686, 6699, 6716, 6725, 6744, 6753, 6763, 6772, 6775, 6781, 6783, 6792	148	72AL-105
CSB Feature 4 Phase I-7	Ca. 1700 Fill around cross-piece	6652	149	72AL-107
CSB Feature 4 Phase I-8	Ca. 1700 Fecal deposition with mixed fill and wood debris	6522, 6525, 6545, 6557, 6575, 6590, 6599, 6616, 6630, 6644, 6667	146	72AL-108
CSB Feature 4 Phase I-10	Ca. 1700 Fecal deposition	6426, 6429, 6433, 6446, 6448, 6455, 6481, 6495	100	72AL-110
CSB Phase II	Ca. 1710 Early 18th c. use of Feature 4	6165, 6166, 6169, 6180, 6308, 6318	99	72AL-B

APPENDIX E.

ELEMENT DISTRIBUTION DATA

Table E1.
Element Distribution
***Sus scrofa* (Domestic Pig)**

	Paddy's Alley Phases											
	I	I-W	I-E	II	III-W	III-E	III	IV	IV-1-W	IV-1-E	IV-2	IV-3-W
Skull	3	2	1	6	9	3	6	26	3	0	1	10
Antler	0	0	0	0	0	0	0	0	0	0	0	0
Mandible	1	1	0	3	7	0	7	15	0	1	0	5
Tooth	4	3	1	6	12	1	11	54	4	1	0	22
Vertebra	1	0	1	4	6	2	4	31	4	3	0	12
Rib	2	1	1	0	0	0	0	1	0	0	0	1
Innominate	0	0	0	1	6	0	6	21	6	0	0	6
Scapula	0	0	0	0	6	2	4	15	1	0	0	6
Humerus	2	2	0	1	6	3	3	13	0	2	0	3
Ulna	0	0	0	2	6	2	4	12	1	0	1	5
Radius	1	1	0	1	6	3	3	9	0	0	0	5
Carpal	0	0	0	0	2	0	2	1	0	0	0	0
Metacarpal	1	0	1	3	5	0	5	11	1	1	0	1
Femur	2	2	0	4	8	3	5	28	1	1	1	7
Tibia	2	0	2	2	13	3	10	27	1	1	2	14
Fibula	1	1	0	0	2	0	2	5	1	0	1	1
Tarsal	2	1	1	3	8	1	7	19	3	1	0	8
Metatarsal	1	1	0	3	5	1	4	11	1	0	0	5
Metapodial	0	0	0	2	5	0	5	9	0	0	1	4
Phalange	1	1	0	6	14	4	10	25	4	1	0	11
Sesamoid	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	1	0	0	0	0	0	0	0	0
Total Bones	24	16	8	48	126	28	98	333	31	12	7	126

Table E1 (cont'd).
Element Distribution
***Sus scrofa* (Domestic Pig)**

	Paddy's Alley Phases							Cross St. Back Lot Phases				
	IV-3-E	V	VI	VII	VII-W	VII-E	IX	I	I-2	I-3	I-5	I-7
Skull	12	2	0	4	0	4	0	9	0	0	5	0
Antler	0	0	0	0	0	0	0	0	0	0	0	0
Mandible	9	0	0	5	0	5	0	2	0	0	2	0
Tooth	27	0	0	8	0	8	0	3	0	0	1	0
Vertebra	12	1	1	7	1	6	0	67	43	0	21	0
Rib	0	0	0	0	0	0	0	27	21	0	6	0
Innominate	9	0	0	1	0	1	0	8	5	0	0	0
Scapula	8	0	0	1	0	1	0	2	1	0	1	0
Humerus	8	0	0	1	0	1	0	11	9	0	0	0
Ulna	5	1	0	0	0	0	0	6	3	0	2	0
Radius	4	0	0	2	0	2	1	7	3	0	3	0
Carpal	1	0	0	0	0	0	0	14	10	0	4	0
Metacarpal	8	1	0	0	0	0	0	10	9	0	1	0
Femur	18	0	0	1	0	1	0	10	8	0	1	0
Tibia	9	0	1	1	0	1	0	7	6	0	0	0
Fibula	2	0	0	0	0	0	0	2	2	0	0	0
Tarsal	7	0	0	0	0	0	0	10	8	0	1	0
Metatarsal	5	0	0	1	0	1	0	6	6	0	0	0
Metapodial	4	1	0	1	0	1	0	12	11	0	0	0
Phalange	9	0	0	2	0	2	0	71	54	0	7	5
Sesamoid	0	0	0	0	0	0	0	4	3	0	0	1
Other	0	0	0	0	0	0	0	4	2	0	2	0
Total Bones	157	6	2	35	1	34	1	296	203	0	57	6

Table E1 (cont'd).
Element Distribution
***Sus scrofa* (Domestic Pig)**

	Cross St. Back Lot Phases						Mill Pond Phases				
	I-8	I-10	II	II-1	II-2	II-3	I	III	IIIa	IV	V
Skull	2	0	27	13	5	3	7	0	6	1	10
Antler	0	0	0	0	0	0	0	0	0	0	0
Mandible	0	0	23	9	1	1	2	1	12	0	3
Tooth	1	1	33	5	4	9	7	0	15	4	25
Vertebra	1	1	23	3	0	0	2	2	20	2	9
Rib	0	0	1	0	0	0	0	0	1	0	0
Innominate	1	2	4	2	0	1	1	1	1	1	6
Scapula	0	0	8	3	1	1	2	0	3	1	3
Humerus	1	1	4	0	1	0	7	0	3	0	2
Ulna	0	1	1	0	0	0	1	0	1	3	4
Radius	0	1	6	1	0	0	2	2	5	0	5
Carpal	0	0	2	1	0	0	0	0	1	0	0
Metacarpal	0	0	9	0	0	0	6	0	9	3	5
Femur	0	1	6	1	0	2	3	2	3	4	5
Tibia	1	0	12	1	4	1	4	2	6	2	3
Fibula	0	0	2	0	0	0	3	0	2	1	3
Tarsal	0	1	7	0	1	0	1	0	6	0	3
Metatarsal	0	0	10	0	0	1	3	0	9	0	2
Metapodial	0	1	6	2	0	2	5	0	2	2	0
Phalange	2	2	21	2	3	7	6	0	9	1	1
Sesamoid	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	1	0	0	1	0	0	0	0	0
Total Bones	9	12	206	43	20	29	62	10	114	25	89

Table E2.
Element Distribution
***Bos taurus* (Domestic Cow)**

	Paddy's Alley Phases											
	I	I-W	I-E	II	III	III-W	III-E	IV	IV-1-W	IV-1-E	IV-2	IV-3-W
Skull	7	4	3	19	25	4	21	55	9	3	0	9
Antler	0	0	0	0	0	0	0	0	0	0	0	0
Mandible	10	3	7	4	11	2	9	52	8	0	0	8
Tooth	10	4	6	14	27	3	24	94	6	1	0	25
Vertebra	14	12	2	26	42	9	33	140	20	0	1	45
Rib	1	0	1	1	3	0	3	2	1	1	0	0
Innominate	3	2	1	5	11	1	10	23	5	2	0	5
Scapula	1	1	0	2	7	2	5	23	3	2	0	7
Humerus	1	1	0	0	12	1	11	14	1	0	1	5
Ulna	2	2	0	1	6	2	4	17	2	1	1	6
Radius	4	4	0	3	12	5	7	19	1	2	0	9
Carpal	2	2	0	2	3	2	1	12	0	0	0	5
Metacarpal	0	0	0	1	2	0	2	7	0	0	0	1
Femur	2	1	1	1	9	1	8	25	3	2	1	6
Tibia	4	1	3	1	12	5	7	16	1	1	0	3
Fibula	0	0	0	0	0	0	0	0	0	0	0	0
Tarsal	5	4	1	2	9	2	7	27	1	2	1	13
Metatarsal	1	1	0	0	2	1	1	11	3	0	1	1
Metapodial	0	0	0	1	1	1	0	3	0	0	0	0
Phalange	5	3	2	2	14	2	12	23	1	1	1	14
Sesamoid	0	0	0	0	0	0	0	2	0	0	0	2
Other	0	0	0	0	2	0	2	3	2	0	0	0
Total Bones	72	45	27	85	210	43	167	568	67	18	7	164

Table E2 (cont'd).
Element Distribution
***Bos taurus* (Domestic Cow)**

	Paddy's Alley Phases						Cross St. Back Lot Phases					
	IV-3-E	V	VI	VII	VII-W	VII-E	IX	I	I-2	I-3	I-5	I-7
Skull	34	6	3	3	0	3	0	34	0	0	10	0
Antler	0	0	0	0	0	0	0	0	0	0	0	0
Mandible	36	1	0	6	1	5	0	6	0	0	0	0
Tooth	62	3	0	9	0	9	0	1	0	0	1	0
Vertebra	74	8	0	20	0	20	1	47	2	0	27	1
Rib	0	0	0	3	0	3	0	6	0	0	4	0
Innominate	11	1	0	2	0	2	0	12	0	0	3	0
Scapula	11	0	0	3	0	3	0	15	1	0	3	0
Humerus	7	1	0	3	0	3	0	14	4	0	3	0
Ulna	7	0	0	2	0	2	1	8	0	0	2	0
Radius	7	3	0	2	0	2	0	8	0	0	4	0
Carpal	7	0	0	2	0	2	0	0	0	0	0	0
Metacarpal	6	0	0	1	1	0	1	4	0	0	1	0
Femur	13	1	1	1	0	1	0	13	0	0	2	0
Tibia	11	1	0	3	0	3	0	14	0	0	4	1
Fibula	0	0	0	0	0	0	0	0	0	0	0	0
Tarsal	10	1	0	5	0	5	0	7	1	0	3	0
Metatarsal	6	1	0	0	0	0	0	7	1	0	0	0
Metapodial	3	0	0	0	0	0	0	0	0	0	0	0
Phalange	6	1	0	4	0	4	0	5	0	0	0	0
Sesamoid	0	0	0	0	0	0	0	5	0	0	0	4
Other	1	0	0	0	0	0	0	4	1	0	2	0
Total Bones	312	28	4	69	2	67	3	210	10	0	69	6

Table E2 (cont'd).
Element Distribution
***Bos taurus* (Domestic Cow)**

	Cross St. Back Lot Phases						Mill Pond Phases				
	I-8	I-10	II	II-1	II-2	II-3	I	III	IIIa	IV	V
Skull	2	2	144	60	39	6	7	3	22	1	5
Antler	0	0	1	0	1	0	0	0	0	0	0
Mandible	2	3	16	4	4	2	2	2	4	4	2
Tooth	0	0	17	5	2	3	8	6	8	11	18
Vertebra	4	6	59	27	10	4	10	4	37	11	29
Rib	1	1	7	4	0	0	0	0	3	1	0
Innominate	1	5	12	3	6	0	3	1	9	3	6
Scapula	2	3	19	3	2	2	6	1	3	2	1
Humerus	3	2	7	2	0	1	2	2	0	6	5
Ulna	3	1	8	1	2	2	0	3	4	4	5
Radius	3	1	6	1	2	1	2	2	2	2	2
Carpal	0	0	6	2	0	2	0	1	2	1	0
Metacarpal	1	1	1	1	0	0	0	0	1	4	6
Femur	3	2	16	10	1	4	6	0	6	3	3
Tibia	1	5	25	8	3	3	2	0	3	6	6
Fibula	0	0	0	0	0	0	0	0	0	0	0
Tarsal	2	0	6	4	1	1	0	4	3	5	4
Metatarsal	2	1	5	1	3	0	3	0	0	3	3
Metapodial	0	0	1	0	0	0	0	0	0	0	3
Phalange	0	2	15	8	3	1	7	0	0	3	6
Sesamoid	1	0	1	1	0	0	2	0	0	0	0
Other	0	0	0	0	0	0	1	0	0	0	0
Total Bones	31	35	372	145	79	32	61	29	107	70	104

Table E3.
Element Distribution
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**

	Paddy's Alley Phases											
	I	I-W	I-E	II	III	III-W	III-E	IV	IV-1-W	IV-1-E	IV-2	IV-3-W
Skull	3	3	0	7	23	4	19	25	3	0	0	13
Antler	0	0	0	0	0	0	0	0	0	0	0	0
Mandible	2	1	1	6	16	3	13	33	3	0	0	5
Tooth	3	3	0	9	40	11	29	66	3	4	0	28
Vertebra	1	1	0	11	47	9	38	84	9	3	1	45
Rib	0	0	0	2	3	0	3	6	4	0	0	0
Innominate	2	2	0	8	20	6	14	53	1	2	0	16
Scapula	5	4	1	6	5	1	4	38	11	2	0	8
Humerus	1	1	0	9	21	6	15	50	5	0	2	16
Ulna	2	0	2	3	9	4	5	19	1	0	0	12
Radius	2	1	1	5	21	8	13	43	2	1	1	23
Carpal	0	0	0	1	1	0	1	5	0	0	0	4
Metacarpal	3	3	0	4	7	1	6	29	1	0	1	7
Femur	6	5	1	6	19	7	12	42	7	1	0	16
Tibia	5	4	1	7	17	3	14	61	7	1	3	27
Fibula	0	0	0	0	0	0	0	0	0	0	0	0
Tarsal	2	2	0	2	23	8	15	32	0	2	0	21
Metatarsal	1	1	0	3	6	2	4	21	1	2	0	9
Metapodial	0	0	0	0	1	0	1	0	0	0	0	0
Phalange	1	0	1	4	8	3	5	8	2	0	0	0
Sesamoid	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	2	0	2	2	1	0	0	1
Total Bones	39	31	8	93	289	76	213	617	61	18	8	251

Table E3 (cont'd).
Element Distribution
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**

	Paddy's Alley Phases							Cross St. Back Lot Phases				
	IV-3-E	V	VI	VII	VII-W	VII-E	IX	I	I-2	I-3	I-5	I-7
Skull	9	12	0	0	0	0	0	20	0	0	2	1
Antler	0	0	0	0	0	0	0	2	0	0	0	1
Mandible	25	1	0	1	0	1	0	6	0	0	2	0
Tooth	31	7	0	3	0	3	0	6	0	0	0	0
Vertebra	26	10	1	15	0	15	0	18	0	0	12	0
Rib	2	0	0	1	0	1	0	2	0	0	2	0
Innominate	34	1	3	5	0	5	0	1	0	0	0	0
Scapula	17	0	0	5	0	5	0	7	0	0	0	1
Humerus	27	1	0	4	0	4	0	3	0	0	1	0
Ulna	6	1	0	6	0	6	0	1	0	0	0	0
Radius	16	2	0	6	0	6	0	0	0	0	0	0
Carpal	1	0	0	0	0	0	0	7	1	0	6	0
Metacarpal	20	0	0	9	1	8	1	3	0	0	1	0
Femur	18	1	2	6	0	6	0	6	0	0	0	0
Tibia	23	3	0	6	0	6	2	8	1	0	2	0
Fibula	0	0	0	0	0	0	0	0	0	0	0	0
Tarsal	9	4	1	11	0	11	0	12	4	1	4	3
Metatarsal	9	1	0	6	0	6	1	3	0	0	1	0
Metapodial	0	0	0	0	0	0	0	2	0	0	2	0
Phalange	6	0	0	2	0	2	0	13	0	0	7	0
Sesamoid	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0
Total Bones	279	44	7	86	1	85	4	120	6	1	42	6

Table E3 (cont'd).
Element Distribution
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**

	Cross St. Back Lot Phases						Mill Pond Phases				
	I-8	I-10	II	II-1	II-2	II-3	I	III	IIIa	IV	V
Skull	2	3	53	38	9	4	2	0	0	0	3
Antler	0	0	0	0	0	0	0	0	0	0	0
Mandible	2	1	34	18	8	3	0	5	1	4	13
Tooth	0	5	38	21	11	3	3	5	3	7	15
Vertebra	2	3	21	8	4	5	13	2	14	3	8
Rib	0	0	0	0	0	0	0	0	0	0	0
Innominate	0	0	8	4	0	1	9	3	7	6	12
Scapula	3	1	12	4	2	1	4	2	3	3	6
Humerus	1	1	18	9	2	6	5	1	4	4	7
Ulna	0	1	1	0	0	0	2	0	0	1	14
Radius	0	0	7	2	0	1	4	0	5	5	12
Carpal	0	0	0	0	0	0	0	0	0	0	0
Metacarpal	1	1	5	2	0	0	5	2	3	4	8
Femur	2	3	19	5	2	6	9	2	3	2	4
Tibia	2	2	11	3	1	3	7	1	13	4	8
Fibula	0	0	0	0	0	0	0	0	0	0	0
Tarsal	0	0	12	7	3	2	2	1	7	3	9
Metatarsal	1	0	5	2	0	2	4	2	7	4	3
Metapodial	0	0	0	0	0	0	0	0	0	0	0
Phalange	3	2	3	2	0	1	1	0	0	1	3
Sesamoid	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0
Total Bones	19	23	247	125	42	38	70	26	70	51	125

APPENDIX F.

KILL-OFF ANALYSIS DATA

Table F1.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase I

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	1	0
Humerus - distal	0	0
Second phalange - proximal	1	0
Scapula	0	0
	2	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	1	0
First phalange - proximal	0	0
Tibia - distal	1	1
Metatarsal - distal	0	1
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	2	2
Percent of Age Range	50.0%	50.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	2
Radius - distal	0	0
Femur - proximal and distal	0	1
	0	3
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F2.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase I-W

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	1	0
Humerus - distal	0	0
Second phalange - proximal	1	0
Scapula	0	0
	2	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	1
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	0	1
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	2
Radius - distal	0	0
Femur - proximal and distal	0	1
	0	3
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F3.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase I-E

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	0	0
Scapula	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	1	0
First phalange - proximal	0	0
Tibia - distal	1	1
Metatarsal - distal	0	0
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	2	1
Percent of Age Range	66.7%	33.3%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F4.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase II

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	1	0
Scapula	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	1
First phalange - proximal	0	0
Tibia - distal	1	0
Metatarsal - distal	1	1
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	1	1
	3	3
Percent of Age Range	50.0%	50.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	1
Humerus - proximal	0	0
Radius - distal	0	1
Femur - proximal and distal	0	4
	0	6
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F5.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase III

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	1	2
Humerus - distal	2	0
Second phalange - proximal	3	0
Scapula	0	1
	6	3
Percent of Age Range	66.7%	33.3%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	1	2
First phalange - proximal	0	0
Tibia - distal	2	3
Metatarsal - distal	0	2
Calcaneus	0	4
Fibula - distal	0	0
Metapodial - distal	0	2
	3	13
Percent of Age Range	18.8%	71.2%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	2
Humerus - proximal	0	3
Radius - distal	0	1
Femur - proximal and distal	0	5
	0	11
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F6.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase III-W

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	1
Humerus - distal	1	0
Second phalange - proximal	0	0
Scapula	0	0
	1	1
Percent of Age Range	50.0%	50.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	2
Radius - distal	0	0
Femur - proximal and distal	0	1
	0	3
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F7.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase III-E

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	1	1
Humerus - distal	1	0
Second phalange - proximal	3	0
Scapula	0	1
	5	2
Percent of Age Range	71.4%	28.6%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	1	2
First phalange - proximal	0	0
Tibia - distal	2	3
Metatarsal - distal	0	2
Calcaneus	0	4
Fibula - distal	0	0
Metapodial - distal	0	2
	3	13
Percent of Age Range	18.8%	71.2%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	2
Humerus - proximal	0	1
Radius - distal	0	1
Femur - proximal and distal	0	4
	0	8
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F8.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase IV

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	5	0
Humerus - distal	1	2
Second phalange - proximal	3	4
Scapula	3	0
	12	6
Percent of Age Range	66.7%	33.3%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	1	6
First phalange - proximal	0	0
Tibia - distal	2	7
Metatarsal - distal	1	6
Calcaneus	0	5
Fibula - distal	0	2
Metapodial - distal	0	6
	4	32
Percent of Age Range	11.1%	88.9%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	1	6
Humerus - proximal	0	3
Radius - distal	0	1
Femur - proximal and distal	1	19
	2	29
Percent of Age Range	6.5%	93.5%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F9.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase IV-1-W

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	0	1
Scapula	0	0
	0	1
Percent of Age Range	0.0%	100.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	1
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	1	0
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	1	1
Percent of Age Range	50.0%	50.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	2
	0	2
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F10.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase IV-1-E

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	1	0
Scapula	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	1
First phalange - proximal	0	0
Tibia - distal	0	1
Metatarsal - distal	0	0
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	0	2
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	1
	0	1
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F11.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase IV-2

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	0	0
Scapula	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	1	1
Metatarsal - distal	0	0
Calcaneus	0	0
Fibula - distal	0	1
Metapodial - distal	0	1
	1	3
Percent of Age Range	25.0%	75.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	1
	0	1
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F12.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase IV-3-W

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	4	0
Humerus - distal	0	1
Second phalange - proximal	1	1
Scapula	1	0
	6	2
Percent of Age Range	75.0%	25.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	1	0
First phalange - proximal	0	0
Tibia - distal	0	2
Metatarsal - distal	0	2
Calcaneus	0	2
Fibula - distal	0	0
Metapodial - distal	0	2
	1	8
Percent of Age Range	11.1%	88.9%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	1	3
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	4
	1	7
Percent of Age Range	12.5%	87.5%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F13.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase IV-3-E

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	1	0
Humerus - distal	1	1
Second phalange - proximal	1	2
Scapula	2	0
	5	3
Percent of Age Range	62.5%	37.5%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	4
First phalange - proximal	0	0
Tibia - distal	1	3
Metatarsal - distal	0	4
Calcaneus	0	3
Fibula - distal	0	1
Metapodial - distal	0	3
	1	18
Percent of Age Range	5.3%	94.7%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	3
Humerus - proximal	0	3
Radius - distal	0	1
Femur - proximal and distal	1	11
	1	18
Percent of Age Range	5.3%	94.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F14.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase V

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	0	0
Scapula	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	1	0
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F15.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase VI

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	0	0
Scapula	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F16.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase VII

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	1	0
Humerus - distal	0	0
Second phalange - proximal	0	0
Scapula	1	0
	2	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	1
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	0	1
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	2
	0	2
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F17.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase VII-W

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	0	0
Scapula	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F18.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase VII-E

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	1	0
Humerus - distal	0	0
Second phalange - proximal	0	0
Scapula	1	0
	2	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	1
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	0	1
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	2
	0	2
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F19.
Age Groups
***Sus scrofa* (Domestic Pig)**
Paddy's Alley Phase IX

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	1	0
Humerus - distal	0	0
Second phalange - proximal	0	0
Scapula	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F20.
Age Groups
***Sus scrofa* (Domestic Pig)**
Cross Street Back Lot Phase I

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	2	0
Humerus - distal	0	0
Second phalange - proximal	1	0
Scapula	0	0
	3	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	1
Radius - distal	0	1
Femur - proximal and distal	0	0
	0	2
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F21.
Age Groups
***Sus scrofa* (Domestic Pig)**
Cross Street Feature 4 Phase I

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	1	4
Humerus - distal	1	4
Second phalange - proximal	1	19
Scapula	0	2
	3	29
Percent of Age Range	9.4%	90.6%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	10
First phalange - proximal	0	0
Tibia - distal	0	5
Metatarsal - distal	0	6
Calcaneus	0	5
Fibula - distal	0	2
Metapodial - distal	0	12
	0	40
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	5
Humerus - proximal	1	6
Radius - distal	0	4
Femur - proximal and distal	0	13
	1	28
Percent of Age Range	3.4%	96.6%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F22.
Age Groups
***Sus scrofa* (Domestic Pig)**
Cross Street Feature 4 Phase I-2

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	2
Humerus - distal	0	4
Second phalange - proximal	1	16
Scapula	0	1
	1	23
Percent of Age Range	4.2%	95.8%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	9
First phalange - proximal	0	0
Tibia - distal	0	4
Metatarsal - distal	0	6
Calcaneus	0	3
Fibula - distal	0	2
Metapodial - distal	0	11
	0	35
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	2
Humerus - proximal	1	6
Radius - distal	0	2
Femur - proximal and distal	0	10
	1	20
Percent of Age Range	4.8%	95.2%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F23.
Age Groups
***Sus scrofa* (Domestic Pig)**
Cross Street Feature 4 Phase I-3

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	0	0
Scapula	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F24.
Age Groups
***Sus scrofa* (Domestic Pig)**
Cross Street Feature 4 Phase I-5

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	1	2
Humerus - distal	0	0
Second phalange - proximal	0	1
Scapula	0	1
	1	4
Percent of Age Range	20.0%	80.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	1
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	1
Fibula - distal	0	0
Metapodial - distal	0	0
	0	2
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	3
Humerus - proximal	0	0
Radius - distal	0	1
Femur - proximal and distal	0	2
	0	6
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F25.
Age Groups
***Sus scrofa* (Domestic Pig)**
Cross Street Feature 4 Phase I-7

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	0	0
Scapula	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F26.
Age Groups
***Sus scrofa* (Domestic Pig)**
Cross Street Feature 4 Phase I-8

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	0	2
Scapula	0	0
	0	0
Percent of Age Range	0.0%	100.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	0	1
Metatarsal - distal	0	0
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	0	1
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F27.
Age Groups
***Sus scrofa* (Domestic Pig)**
Cross Street Feature 4 Phase I-10

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	1	0
Second phalange - proximal	0	0
Scapula	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	1
Fibula - distal	0	0
Metapodial - distal	0	1
	0	2
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	1
Femur - proximal and distal	0	1
	0	2
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F28.
Age Groups
***Sus scrofa* (Domestic Pig)**
Cross Street Back Lot Phase II

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	1	0
Scapula	2	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	1	0
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	1
Fibula - distal	0	0
Metapodial - distal	0	0
	1	1
Percent of Age Range	50.0%	50.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	1	0
Radius - distal	0	0
Femur - proximal and distal	0	2
	1	2
Percent of Age Range	33.3%	66.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F29.
Age Groups
***Sus scrofa* (Domestic Pig)**
Cross Street Feature 4 Phase II

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	2	3
Scapula	2	1
	4	4
Percent of Age Range	50.0%	50.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	1	2
Metatarsal - distal	0	1
Calcaneus	0	1
Fibula - distal	0	0
Metapodial - distal	0	4
	1	8
Percent of Age Range	11.1%	88.9%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	1
Radius - distal	0	1
Femur - proximal and distal	0	4
	0	6
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F30.
Age Groups
***Sus scrofa* (Domestic Pig)**
Cross Street Feature 4 Phase II-1

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	0	0
Scapula	1	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	2
	0	2
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	1
Femur - proximal and distal	0	1
	0	2
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F31.
Age Groups
***Sus scrofa* (Domestic Pig)**
Cross Street Feature 4 Phase II-2

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	2	0
Scapula	0	1
	2	1
Percent of Age Range	66.7%	33.3%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	1	1
Metatarsal - distal	0	0
Calcaneus	0	1
Fibula - distal	0	0
Metapodial - distal	0	0
	1	2
Percent of Age Range	33.3%	66.7%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	1
Radius - distal	0	0
Femur - proximal and distal	0	0
	0	1
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F32.
Age Groups
***Sus scrofa* (Domestic Pig)**
Cross Street Feature 4 Phase II-3

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	0	3
Scapula	1	0
	1	3
Percent of Age Range	25.0%	75.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	0	1
Metatarsal - distal	0	1
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	2
	0	4
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	3
	0	3
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F33.
Age Groups
***Sus scrofa* (Domestic Pig)**
Cross Street Back Lot Phase III

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	1	0
Humerus - distal	0	1
Second phalange - proximal	1	0
Scapula	1	0
	3	1
Percent of Age Range	75.0%	25.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	1	3
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	2
Calcaneus	1	1
Fibula - distal	0	0
Metapodial - distal	1	0
	3	6
Percent of Age Range	33.3%	66.7%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	2
Humerus - proximal	0	1
Radius - distal	0	0
Femur - proximal and distal	2	5
	2	8
Percent of Age Range	20.0%	80.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F34.
Age Groups
***Sus scrofa* (Domestic Pig)**
Cross Street Back Lot Phase IV

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	0	0
Scapula	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F35.
Age Groups
***Sus scrofa* (Domestic Pig)**
Cross Street Back Lot Phase V

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	1	0
Humerus - distal	0	1
Second phalange - proximal	1	0
Scapula	0	0
	2	1
Percent of Age Range	66.7%	33.3%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	1	0
Metatarsal - distal	0	1
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	1	1
Percent of Age Range	50.0%	50.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	1
Humerus - proximal	0	1
Radius - distal	0	0
Femur - proximal and distal	0	2
	0	4
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F36.
Age Groups
***Sus scrofa* (Domestic Pig)**
Mill Pond Phase I

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	1	0
Humerus - distal	3	1
Second phalange - proximal	0	2
Scapula	0	0
	4	3
Percent of Age Range	57.1%	42.9%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	5
First phalange - proximal	0	0
Tibia - distal	0	2
Metatarsal - distal	0	1
Calcaneus	0	1
Fibula - distal	0	0
Metapodial - distal	0	4
	0	13
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	2
Radius - distal	0	1
Femur - proximal and distal	0	2
	0	5
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F37.
Age Groups
***Sus scrofa* (Domestic Pig)**
Mill Pond Phase III

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	0	0
Scapula	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
First phalange - proximal	0	0
Tibia - distal	0	1
Metatarsal - distal	0	0
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	0	1
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	2
	0	2
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F38.
Age Groups
***Sus scrofa* (Domestic Pig)**
Mill Pond Phase IIIa

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	1	1
Humerus - distal	1	0
Second phalange - proximal	0	0
Scapula	1	0
	3	1
Percent of Age Range	75.0%	25.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	6	0
First phalange - proximal	0	0
Tibia - distal	0	2
Metatarsal - distal	7	3
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	0
	13	5
Percent of Age Range	72.2%	27.8%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Humerus - proximal	0	2
Radius - distal	1	1
Femur - proximal and distal	0	2
	1	5
Percent of Age Range	16.7%	83.3%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F39.
Age Groups
***Sus scrofa* (Domestic Pig)**
Mill Pond Phase IV

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	0
Humerus - distal	0	0
Second phalange - proximal	0	0
Scapula	1	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	2
First phalange - proximal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Fibula - distal	0	0
Metapodial - distal	0	2
	0	4
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	2
Humerus - proximal	0	0
Radius - distal	0	0
Femur - proximal and distal	0	4
	0	6
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F40.
Age Groups
***Sus scrofa* (Domestic Pig)**
Mill Pond Phase V

Age of Fusion - 0 to 12 Months

Bone and Epiphysis	Fused	Not Fused
Radius - proximal	0	2
Humerus - distal	1	1
Second phalange - proximal	0	0
Scapula	1	0
	2	3
Percent of Age Range	40.0%	60.0%

Age of Fusion - 12 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	3
First phalange - proximal	0	0
Tibia - distal	1	1
Metatarsal - distal	0	2
Calcaneus	0	2
Fibula - distal	0	0
Metapodial - distal	0	0
	1	8
Percent of Age Range	11.1%	88.9%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	3
Humerus - proximal	0	0
Radius - distal	0	2
Femur - proximal and distal	1	2
	1	7
Percent of Age Range	12.5%	87.5%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F41.
Age Groups
***Bos taurus* (Domestic Cow)**
Paddy's Alley Phase I

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	2
First Phalange - proximal	0	0
Second Phalange - proximal	0	1
	0	3
Percent of Age Range	0.0%	100.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	3	0
Metatarsal - distal	0	0
Calcaneus	0	1
Metapodial - distal	0	0
	3	1
Percent of Age Range	75.0%	25.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	2
Ulna - proximal and distal	0	0
Femur - proximal	0	0
Femur - distal	0	2
Tibia - proximal	0	1
Humerus - proximal	0	0
	0	5
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F42.
Age Groups
***Bos taurus* (Domestic Cow)**
Paddy's Alley Phase I-W

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	2
First Phalange - proximal	0	0
Second Phalange - proximal	0	1
	0	3
Percent of Age Range	0.0%	100.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Metapodial - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	2
Ulna - proximal and distal	0	0
Femur - proximal	0	0
Femur - distal	0	1
Tibia - proximal	0	1
Humerus - proximal	0	0
	0	4
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F43.
Age Groups
***Bos taurus* (Domestic Cow)**
Paddy's Alley Phase I-E

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	3	0
Metatarsal - distal	0	0
Calcaneus	0	1
Metapodial - distal	0	0
	3	1
Percent of Age Range	75.0%	25.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	0
Ulna - proximal and distal	0	0
Femur - proximal	0	0
Femur - distal	0	1
Tibia - proximal	0	0
Humerus - proximal	0	0
	0	1
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F44.
Age Groups
***Bos taurus* (Domestic Cow)**
Paddy's Alley Phase II

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	1
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	0	1
Percent of Age Range	0.0%	100.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	1	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	1
Metapodial - distal	0	1
	1	2
Percent of Age Range	33.3%	66.7%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	1
Ulna - proximal and distal	0	0
Femur - proximal	0	0
Femur - distal	1	0
Tibia - proximal	0	0
Humerus - proximal	0	0
	1	1
Percent of Age Range	50.0%	50.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F45.
Age Groups
***Bos taurus* (Domestic Cow)**
Paddy's Alley Phase III

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	1	0
Humerus - distal	3	2
Radius - proximal	6	2
First Phalange - proximal	0	0
Second Phalange - proximal	4	1
	14	5
Percent of Age Range	73.7%	26.3%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	2	3
Metatarsal - distal	0	0
Calcaneus	0	2
Metapodial - distal	0	1
	2	6
Percent of Age Range	25.0%	75.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	1	1
Ulna - proximal and distal	0	0
Femur - proximal	1	3
Femur - distal	1	2
Tibia - proximal	0	2
Humerus - proximal	0	0
	3	8
Percent of Age Range	27.3%	72.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F46.
Age Groups
***Bos taurus* (Domestic Cow)**
Paddy's Alley Phase III-W

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	1	0
Humerus - distal	1	0
Radius - proximal	3	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	5	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	0	1
Metatarsal - distal	0	0
Calcaneus	0	1
Metapodial - distal	0	1
	0	3
Percent of Age Range	0.0%	100.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	1
Ulna - proximal and distal	0	0
Femur - proximal	0	0
Femur - distal	0	1
Tibia - proximal	0	1
Humerus - proximal	0	0
	0	3
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F47.
Age Groups
***Bos taurus* (Domestic Cow)**
Paddy's Alley Phase III-E

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	2	2
Radius - proximal	3	2
First Phalange - proximal	0	0
Second Phalange - proximal	4	1
	9	5
Percent of Age Range	64.3%	35.7%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	2	2
Metatarsal - distal	0	0
Calcaneus	0	1
Metapodial - distal	0	0
	2	3
Percent of Age Range	40.0%	60.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	1	0
Ulna - proximal and distal	0	0
Femur - proximal	1	3
Femur - distal	1	1
Tibia - proximal	0	1
Humerus - proximal	0	0
	3	5
Percent of Age Range	37.5%	62.5%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F48.
Age Groups
***Bos taurus* (Domestic Cow)**
Paddy's Alley Phase IV

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	4	6
Humerus - distal	2	4
Radius - proximal	5	2
First Phalange - proximal	0	0
Second Phalange - proximal	2	2
	13	14
Percent of Age Range	48.1%	51.9%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	4	2
Tibia - distal	4	1
Metatarsal - distal	3	4
Calcaneus	1	5
Metapodial - distal	0	3
	12	15
Percent of Age Range	44.4%	55.6%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	1	2
Ulna - proximal and distal	2	3
Femur - proximal	3	7
Femur - distal	2	3
Tibia - proximal	1	6
Humerus - proximal	1	1
	10	22
Percent of Age Range	31.3%	68.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F49.
Age Groups
***Bos taurus* (Domestic Cow)**
Paddy's Alley Phase IV-1-W

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	1	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	1	0
	2	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	0	0
Metatarsal - distal	2	0
Calcaneus	0	1
Metapodial - distal	0	0
	2	1
Percent of Age Range	66.7%	33.3%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	0
Ulna - proximal and distal	0	1
Femur - proximal	1	0
Femur - distal	0	1
Tibia - proximal	0	1
Humerus - proximal	0	0
	1	3
Percent of Age Range	25.0%	75.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F50.
Age Groups
***Bos taurus* (Domestic Cow)**
Paddy's Alley Phase IV-1-E

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	1	0
Humerus - distal	0	0
Radius - proximal	1	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	2	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	1	0
Metatarsal - distal	0	0
Calcaneus	0	0
Metapodial - distal	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	0
Ulna - proximal and distal	1	0
Femur - proximal	0	2
Femur - distal	0	0
Tibia - proximal	0	0
Humerus - proximal	0	0
	1	2
Percent of Age Range	33.3%	66.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F51.
Age Groups
***Bos taurus* (Domestic Cow)**
Paddy's Alley Phase IV-2

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	1
Calcaneus	0	0
Metapodial - distal	0	0
	0	1
Percent of Age Range	0.0%	100.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	0
Ulna - proximal and distal	0	0
Femur - proximal	0	0
Femur - distal	0	1
Tibia - proximal	0	0
Humerus - proximal	0	1
	0	2
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F52.
Age Groups
***Bos taurus* (Domestic Cow)**
Paddy's Alley Phase IV-3-W

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	4
Humerus - distal	1	0
Radius - proximal	2	1
First Phalange - proximal	0	0
Second Phalange - proximal	1	1
	4	6
Percent of Age Range	40.0%	60.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	1	0
Tibia - distal	1	1
Metatarsal - distal	1	0
Calcaneus	0	2
Metapodial - distal	0	0
	3	3
Percent of Age Range	50.0%	50.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	1	2
Ulna - proximal and distal	1	1
Femur - proximal	0	2
Femur - distal	0	0
Tibia - proximal	0	1
Humerus - proximal	1	0
	3	6
Percent of Age Range	33.3%	66.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F53.
Age Groups
Bos taurus (Domestic Cow)
Paddy's Alley Phase IV-3-E

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	2	2
Humerus - distal	1	4
Radius - proximal	2	1
First Phalange - proximal	0	0
Second Phalange - proximal	0	1
	5	8
Percent of Age Range	38.5%	61.5%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	3	2
Tibia - distal	2	0
Metatarsal - distal	0	3
Calcaneus	1	2
Metapodial - distal	0	3
	6	10
Percent of Age Range	37.5%	62.5%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	0
Ulna - proximal and distal	0	1
Femur - proximal	2	3
Femur - distal	2	1
Tibia - proximal	1	4
Humerus - proximal	0	0
	5	9
Percent of Age Range	35.7%	64.3%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F54.
Age Groups
***Bos taurus* (Domestic Cow)**
Paddy's Alley Phase V

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	1
Radius - proximal	0	1
First Phalange - proximal	0	0
Second Phalange - proximal	1	0
	1	2
Percent of Age Range	33.3%	66.7%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	1
Calcaneus	1	0
Metapodial - distal	0	0
	1	1
Percent of Age Range	50.0%	50.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	1	0
Ulna - proximal and distal	0	0
Femur - proximal	0	0
Femur - distal	0	1
Tibia - proximal	0	1
Humerus - proximal	0	0
	1	2
Percent of Age Range	33.3%	66.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F55.
Age Groups
***Bos taurus* (Domestic Cow)**
Paddy's Alley Phase VI

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Metapodial - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	0
Ulna - proximal and distal	0	0
Femur - proximal	0	0
Femur - distal	0	0
Tibia - proximal	0	0
Humerus - proximal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F56.
Age Groups
Bos taurus (Domestic Cow)
Paddy's Alley Phase VII

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	1	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	1
	1	1
Percent of Age Range	50.0%	50.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	1	1
Metatarsal - distal	0	0
Calcaneus	0	0
Metapodial - distal	0	0
	1	1
Percent of Age Range	50.0%	50.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	1
Ulna - proximal and distal	0	0
Femur - proximal	1	0
Femur - distal	0	0
Tibia - proximal	1	0
Humerus - proximal	0	0
	2	1
Percent of Age Range	66.7%	33.3%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F57.
Age Groups
***Bos taurus* (Domestic Cow)**
Paddy's Alley Phase VII-W

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Metapodial - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	0
Ulna - proximal and distal	0	0
Femur - proximal	0	0
Femur - distal	0	0
Tibia - proximal	0	0
Humerus - proximal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F58.
Age Groups
***Bos taurus* (Domestic Cow)**
Paddy's Alley Phase VII-E

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	1	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	1
	1	1
Percent of Age Range	50.0%	50.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	1	1
Metatarsal - distal	0	0
Calcaneus	0	0
Metapodial - distal	0	0
	1	1
Percent of Age Range	50.0%	50.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	1
Ulna - proximal and distal	0	0
Femur - proximal	1	0
Femur - distal	0	0
Tibia - proximal	1	0
Humerus - proximal	0	0
	2	1
Percent of Age Range	66.7%	33.3%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F59.
Age Groups
***Bos taurus* (Domestic Cow)**
Paddy's Alley Phase IX

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal	0	0
Sécond Phalange - proximal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Metapodial - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	0
Ulna - proximal and distal	1	0
Femur - proximal	0	0
Femur - distal	0	0
Tibia - proximal	0	0
Humerus - proximal	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F60.
Age Groups
***Bos taurus* (Domestic Cow)**
Cross Street Back Lot Phase I

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	1	1
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	1	1
Percent of Age Range	50.0%	50.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	1	0
Tibia - distal	1	1
Metatarsal - distal	1	0
Calcaneus	1	0
Metapodial - distal	0	0
	4	1
Percent of Age Range	80.0%	20.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	0
Ulna - proximal and distal	0	0
Femur - proximal	2	0
Femur - distal	3	0
Tibia - proximal	0	0
Humerus - proximal	1	0
	6	0
Percent of Age Range	100.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F61.
Age Groups
***Bos taurus* (Domestic Cow)**
Cross Street Feature 4 Phase I

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	2	4
Radius - proximal	4	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	6	4
Percent of Age Range	60.0%	40.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	2	0
Tibia - distal	3	2
Metatarsal - distal	3	0
Calcaneus	2	0
Metapodial - distal	0	0
	10	2
Percent of Age Range	83.3%	16.7%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	2	1
Ulna - proximal and distal	0	2
Femur - proximal	0	2
Femur - distal	1	4
Tibia - proximal	3	0
Humerus - proximal	0	7
	6	16
Percent of Age Range	27.3%	72.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F62.
Age Groups
Bos taurus (Domestic Cow)
Cross Street Feature 4 Phase I-2

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	2
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	0	2
Percent of Age Range	0.0%	100.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Metapodial - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	0
Ulna - proximal and distal	0	0
Femur - proximal	0	0
Femur - distal	0	0
Tibia - proximal	0	0
Humerus - proximal	0	2
	0	2
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F63.
Age Groups
***Bos taurus* (Domestic Cow)**
Cross Street Feature 4 Phase I-3

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Metapodial - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	0
Ulna - proximal and distal	0	0
Femur - proximal	0	0
Femur - distal	0	0
Tibia - proximal	0	0
Humerus - proximal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F64.
Age Groups
***Bos taurus* (Domestic Cow)**
Cross Street Feature 4 Phase I-5

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	2	1
Radius - proximal	3	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	5	1
Percent of Age Range	83.3%	16.7%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	1	0
Tibia - distal	0	1
Metatarsal - distal	0	0
Calcaneus	2	0
Metapodial - distal	0	0
	3	1
Percent of Age Range	75.0%	25.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	0
Ulna - proximal and distal	0	0
Femur - proximal	0	1
Femur - distal	1	0
Tibia - proximal	2	0
Humerus - proximal	0	1
	3	2
Percent of Age Range	60.0%	40.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F65.
Age Groups
***Bos taurus* (Domestic Cow)**
Cross Street Feature 4 Phase I-7

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	1	0
Metatarsal - distal	0	0
Calcaneus	0	0
Metapodial - distal	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	0
Ulna - proximal and distal	0	0
Femur - proximal	0	0
Femur - distal	0	0
Tibia - proximal	0	0
Humerus - proximal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F66.
Age Groups
***Bos taurus* (Domestic Cow)**
Cross Street Feature 4 Phase I-8

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	1
Radius - proximal	1	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	1	1
Percent of Age Range	50.0%	50.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	1	0
Tibia - distal	0	0
Metatarsal - distal	2	0
Calcaneus	0	0
Metapodial - distal	0	0
	3	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	1	1
Ulna - proximal and distal	0	2
Femur - proximal	0	1
Femur - distal	0	2
Tibia - proximal	0	0
Humerus - proximal	0	2
	1	8
Percent of Age Range	11.1%	88.9%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F67.
Age Groups
***Bos taurus* (Domestic Cow)**
Cross Street Feature 4 Phase I-10

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	2	1
Metatarsal - distal	1	0
Calcaneus	0	0
Metapodial - distal	0	0
	3	1
Percent of Age Range	75.0%	25.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	1	0
Ulna - proximal and distal	0	0
Femur - proximal	0	0
Femur - distal	0	2
Tibia - proximal	1	0
Humerus - proximal	0	2
	2	4
Percent of Age Range	33.3%	66.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F68.
Age Groups
***Bos taurus* (Domestic Cow)**
Cross Street Back Lot Phase II

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	1	1
Humerus - distal	2	0
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	1	0
	4	1
Percent of Age Range	80.0%	20.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	3	0
Metatarsal - distal	0	0
Calcaneus	0	0
Metapodial - distal	0	1
	3	1
Percent of Age Range	75.0%	25.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	2
Ulna - proximal and distal	0	1
Femur - proximal	1	0
Femur - distal	0	0
Tibia - proximal	3	3
Humerus - proximal	0	2
	4	8
Percent of Age Range	33.3%	66.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F69.
Age Groups
***Bos taurus* (Domestic Cow)**
Cross Street Feature 4 Phase II

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	1	0
Humerus - distal	0	0
Radius - proximal	2	1
First Phalange - proximal	0	0
Second Phalange - proximal	3	1
	6	2
Percent of Age Range	75.0%	25.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	4	0
Metatarsal - distal	3	1
Calcaneus	1	0
Metapodial - distal	0	0
	8	1
Percent of Age Range	88.9%	11.1%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	1	0
Ulna - proximal and distal	2	2
Femur - proximal	2	1
Femur - distal	2	6
Tibia - proximal	1	4
Humerus - proximal	0	3
	8	16
Percent of Age Range	33.3%	66.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F70.
Age Groups
***Bos taurus* (Domestic Cow)**
Cross Street Feature 4 Phase II-1

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	1	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	1
	1	1
Percent of Age Range	50.0%	50.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	3	0
Metatarsal - distal	0	1
Calcaneus	0	0
Metapodial - distal	0	0
	3	1
Percent of Age Range	75.0%	25.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	0
Ulna - proximal and distal	1	0
Femur - proximal	1	1
Femur - distal	2	4
Tibia - proximal	1	2
Humerus - proximal	0	2
	5	9
Percent of Age Range	35.7%	64.3%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F71.
Age Groups
***Bos taurus* (Domestic Cow)**
Cross Street Feature 4 Phase II-2

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	1	0
Humerus - distal	0	0
Radius - proximal	1	0
First Phalange - proximal	0	0
Second Phalange - proximal	2	0
	4	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	0	0
Metatarsal - distal	3	0
Calcaneus	1	0
Metapodial - distal	0	0
	4	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	1	0
Ulna - proximal and distal	0	1
Femur - proximal	0	0
Femur - distal	0	0
Tibia - proximal	0	1
Humerus - proximal	0	0
	1	2
Percent of Age Range	33.3%	66.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F72.
Age Groups
***Bos taurus* (Domestic Cow)**
Cross Street Feature 4 Phase II-3

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	1
First Phalange - proximal	0	0
Second Phalange - proximal	1	0
	1	1
Percent of Age Range	50.0%	50.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	1	0
Metatarsal - distal	0	0
Calcaneus	0	0
Metapodial - distal	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	0
Ulna - proximal and distal	1	1
Femur - proximal	1	0
Femur - distal	0	2
Tibia - proximal	0	1
Humerus - proximal	0	1
	2	5
Percent of Age Range	28.6%	71.4%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F73.
Age Groups
***Bos taurus* (Domestic Cow)**
Cross Street Back Lot Phase III

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	2
Humerus - distal	0	2
Radius - proximal	1	4
First Phalange - proximal	0	0
Second Phalange - proximal	1	2
	2	10
Percent of Age Range	16.7%	83.3%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	1	1
Tibia - distal	1	0
Metatarsal - distal	0	1
Calcaneus	0	0
Metapodial - distal	0	0
	2	2
Percent of Age Range	50.0%	50.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	2	1
Ulna - proximal and distal	1	0
Femur - proximal	0	0
Femur - distal	1	1
Tibia - proximal	0	3
Humerus - proximal	1	0
	5	5
Percent of Age Range	50.0%	50.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F74.
Age Groups
***Bos taurus* (Domestic Cow)**
Cross Street Back Lot Phase IV

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	0
Metapodial - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	0
Ulna - proximal and distal	0	0
Femur - proximal	0	0
Femur - distal	0	0
Tibia - proximal	0	0
Humerus - proximal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F75.
Age Groups
***Bos taurus* (Domestic Cow)**
Cross Street Back Lot Phase V

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	1
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	1	1
	1	2
Percent of Age Range	33.3%	66.7%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	1
Tibia - distal	1	1
Metatarsal - distal	0	0
Calcaneus	2	0
Metapodial - distal	0	0
	3	2
Percent of Age Range	60.0%	40.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	0
Ulna - proximal and distal	0	1
Femur - proximal	0	0
Femur - distal	2	0
Tibia - proximal	0	1
Humerus - proximal	0	0
	2	2
Percent of Age Range	50.0%	50.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F76.
Age Groups
***Bos taurus* (Domestic Cow)**
Mill Pond Phase I

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	2	1
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	2	0
	4	1
Percent of Age Range	80.0%	20.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	2	0
Metatarsal - distal	0	1
Calcaneus	0	0
Metapodial - distal	0	0
	2	1
Percent of Age Range	66.7%	33.3%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	1
Ulna - proximal and distal	0	0
Femur - proximal	0	1
Femur - distal	0	1
Tibia - proximal	0	0
Humerus - proximal	0	0
	0	3
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F77.
Age Groups
***Bos taurus* (Domestic Cow)**
Mill Pond Phase III

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	1	1
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	1	1
Percent of Age Range	50.0%	50.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	2	1
Metapodial - distal	0	0
	2	1
Percent of Age Range	66.7%	33.3%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	1	0
Ulna - proximal and distal	1	0
Femur - proximal	0	0
Femur - distal	0	0
Tibia - proximal	0	0
Humerus - proximal	0	0
	2	0
Percent of Age Range	100.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F78.
Age Groups
***Bos taurus* (Domestic Cow)**
Mill Pond Phase IIIa

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	1	1
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	0	0
	1	1
Percent of Age Range	50.0%	50.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	0	0
Tibia - distal	0	0
Metatarsal - distal	0	0
Calcaneus	0	1
Metapodial - distal	0	0
	0	1
Percent of Age Range	0.0%	100.0%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	1	0
Ulna - proximal and distal	0	0
Femur - proximal	1	3
Femur - distal	0	0
Tibia - proximal	0	0
Humerus - proximal	0	0
	2	3
Percent of Age Range	40.0%	60.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F79.
Age Groups
***Bos taurus* (Domestic Cow)**
Mill Pond Phase IV

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	2
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	2	0
	2	2
Percent of Age Range	50.0%	50.0%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	1	0
Tibia - distal	3	0
Metatarsal - distal	1	1
Calcaneus	0	1
Metapodial - distal	0	0
	5	2
Percent of Age Range	71.4%	28.6%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	1	0
Ulna - proximal and distal	0	0
Femur - proximal	0	0
Femur - distal	1	1
Tibia - proximal	0	0
Humerus - proximal	0	3
	2	4
Percent of Age Range	33.3%	66.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F80.
Age Groups
***Bos taurus* (Domestic Cow)**
Mill Pond Phase V

Age of Fusion - 7 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	1
Humerus - distal	1	2
Radius - proximal	0	0
First Phalange - proximal	0	0
Second Phalange - proximal	4	0
	5	3
Percent of Age Range	62.5%	37.5%

Age of Fusion - 24 to 36 Months

Bone and Epiphysis	Fused	Not Fused
Metacarpal - distal	1	0
Tibia - distal	1	2
Metatarsal - distal	2	0
Calcaneus	0	2
Metapodial - distal	1	2
	5	6
Percent of Age Range	45.5%	54.5%

Age of Fusion - 36 to 48 Months

Bone and Epiphysis	Fused	Not Fused
Radius - distal	0	2
Ulna - proximal and distal	3	2
Femur - proximal	2	0
Femur - distal	0	0
Tibia - proximal	0	0
Humerus - proximal	0	1
	5	5
Percent of Age Range	50.0%	50.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F81.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase I

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	3	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	3	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	1
Metacarpal - distal	2	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	1	0
	3	1
Percent of Age Range	75.0%	25.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	0
Radius - distal	0	2
Calcaneus	0	2
Femur - proximal and distal	1	1
Tibia - proximal	1	1
	2	6
Percent of Age Range	25.0%	75.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F82.
Age Groups
Ovis aries/Capra hircus (Domestic Sheep/Goat)
Paddy's Alley Phase I-W

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	2	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	2	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	2	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	1	0
	3	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	0
Radius - distal	0	1
Calcaneus	0	2
Femur - proximal and distal	0	1
Tibia - proximal	1	0
	1	4
Percent of Age Range	20.0%	80.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F83.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase I-E

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	1	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	1
Metacarpal - distal	0	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	0	0
	0	1
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	0
Radius - distal	0	1
Calcaneus	0	0
Femur - proximal and distal	1	0
Tibia - proximal	0	1
	1	2
Percent of Age Range	33.3%	66.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F84.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase II

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	5	0
Humerus - distal	2	0
Radius - proximal	5	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	12	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	2	0
Metacarpal - distal	3	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	1	1
	6	1
Percent of Age Range	85.7%	14.3%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	2	4
Radius - distal	0	1
Calcaneus	0	0
Femur - proximal and distal	2	3
Tibia - proximal	1	1
	5	9
Percent of Age Range	35.7%	64.3%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F85.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase III

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	3	0
Humerus - distal	10	2
Radius - proximal	11	1
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	24	3
Percent of Age Range	88.9%	11.1%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	1
Metacarpal - distal	4	0
Metatarsal - distal	0	0
Metapodial - distal	0	1
Tibia - distal	5	4
	9	6
Percent of Age Range	60.0%	40.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	3	6
Radius - distal	5	2
Calcaneus	8	4
Femur - proximal and distal	6	6
Tibia - proximal	2	2
	24	20
Percent of Age Range	54.5%	45.5%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F86.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase III-W

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	4	1
Radius - proximal	5	1
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	9	2
Percent of Age Range	81.8%	18.2%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	1
Metacarpal - distal	1	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	1	0
	2	1
Percent of Age Range	66.7%	33.3%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	2
Radius - distal	1	1
Calcaneus	4	1
Femur - proximal and distal	2	2
Tibia - proximal	0	1
	7	7
Percent of Age Range	50.0%	50.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F87.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase III-E

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	3	0
Humerus - distal	6	1
Radius - proximal	6	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	15	1
Percent of Age Range	93.8%	6.2%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	3	0
Metatarsal - distal	0	0
Metapodial - distal	0	1
Tibia - distal	4	4
	7	5
Percent of Age Range	58.3%	41.7%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	3	4
Radius - distal	4	1
Calcaneus	4	3
Femur - proximal and distal	4	4
Tibia - proximal	2	1
	17	13
Percent of Age Range	56.7%	43.3%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F88.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase IV

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	27	2
Humerus - distal	23	3
Radius - proximal	15	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	65	5
Percent of Age Range	92.9%	7.1%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	3	9
Metacarpal - distal	22	4
Metatarsal - distal	6	1
Metapodial - distal	0	0
Tibia - distal	21	10
	52	24
Percent of Age Range	68.4%	31.6%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	7	14
Radius - distal	7	9
Calcaneus	8	4
Femur - proximal and distal	14	21
Tibia - proximal	8	9
	44	57
Percent of Age Range	43.6%	56.4%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F89.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase IV-1-W

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	9	0
Humerus - distal	1	0
Radius - proximal	2	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	12	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	1	0
Metacarpal - distal	1	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	4	1
	6	1
Percent of Age Range	85.7%	14.3%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	4
Radius - distal	0	1
Calcaneus	0	0
Femur - proximal and distal	4	1
Tibia - proximal	0	2
	4	8
Percent of Age Range	33.3%	66.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F90.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase IV-1-E

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	1	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	0
Metatarsal - distal	0	1
Metapodial - distal	0	0
Tibia - distal	0	0
	0	1
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	0
Radius - distal	0	0
Calcaneus	0	0
Femur - proximal and distal	0	1
Tibia - proximal	0	1
	0	2
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F91.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase IV-2

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	1	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	1
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	0	0
	0	1
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	2
Radius - distal	0	0
Calcaneus	0	0
Femur - proximal and distal	0	0
Tibia - proximal	2	0
	2	2
Percent of Age Range	50.0%	50.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F92.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase IV-3-W

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	5	0
Humerus - distal	9	0
Radius - proximal	9	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	23	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	2	7
Metacarpal - distal	6	1
Metatarsal - distal	4	0
Metapodial - distal	0	0
Tibia - distal	12	5
	24	13
Percent of Age Range	64.9%	35.1%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	1	2
Radius - distal	3	6
Calcaneus	4	4
Femur - proximal and distal	7	6
Tibia - proximal	4	0
	19	18
Percent of Age Range	51.4%	48.6%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F93.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase IV-3-E

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	12	2
Humerus - distal	12	3
Radius - proximal	4	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	28	5
Percent of Age Range	84.8%	15.2%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	2
Metacarpal - distal	15	2
Metatarsal - distal	2	0
Metapodial - distal	0	0
Tibia - distal	5	4
	22	8
Percent of Age Range	73.3%	26.7%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	6	6
Radius - distal	4	2
Calcaneus	4	0
Femur - proximal and distal	3	13
Tibia - proximal	2	6
	19	27
Percent of Age Range	39.6%	60.4%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F94.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase V

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	1	1
	1	1
Percent of Age Range	50.0%	50.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	0
Radius - distal	0	0
Calcaneus	2	0
Femur - proximal and distal	1	0
Tibia - proximal	0	0
	3	0
Percent of Age Range	100.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F95.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase VI

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	0
Radius - distal	0	0
Calcaneus	1	0
Femur - proximal and distal	0	2
Tibia - proximal	0	0
	1	2
Percent of Age Range	33.3%	66.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F96.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase VII

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	1	2
Humerus - distal	2	0
Radius - proximal	3	1
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	6	3
Percent of Age Range	66.7%	33.3%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	3	2
Metatarsal - distal	1	1
Metapodial - distal	0	0
Tibia - distal	2	3
	6	6
Percent of Age Range	50.0%	50.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	1
Radius - distal	0	1
Calcaneus	2	5
Femur - proximal and distal	0	4
Tibia - proximal	0	1
	2	12
Percent of Age Range	14.3%	85.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F97.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase VII-W

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	0
Radius - distal	0	0
Calcaneus	0	0
Femur - proximal and distal	0	0
Tibia - proximal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F98.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase VII-E

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	1	2
Humerus - distal	2	0
Radius - proximal	3	1
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	6	3
Percent of Age Range	66.7%	33.3%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	3	2
Metatarsal - distal	1	1
Metapodial - distal	0	0
Tibia - distal	2	3
	6	6
Percent of Age Range	50.0%	50.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	1
Radius - distal	0	1
Calcaneus	2	5
Femur - proximal and distal	0	4
Tibia - proximal	0	1
	2	12
Percent of Age Range	14.3%	85.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F99.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Paddy's Alley Phase IX

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	1
Metatarsal - distal	0	1
Metapodial - distal	0	0
Tibia - distal	1	0
	1	2
Percent of Age Range	33.3%	66.7%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	0
Radius - distal	0	0
Calcaneus	0	0
Femur - proximal and distal	0	0
Tibia - proximal	0	1
	0	1
Percent of Age Range	0.0%	100.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F100.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Cross Street Back Lot Phase I

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	2	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	2	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	0
Radius - distal	0	0
Calcaneus	0	0
Femur - proximal and distal	1	0
Tibia - proximal	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F101.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Cross Street Feature 4 Phase I

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	3	2
Humerus - distal	2	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	5	2
Percent of Age Range	71.4%	28.6%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	2
Metatarsal - distal	1	0
Metapodial - distal	0	2
Tibia - distal	2	1
	3	5
Percent of Age Range	37.5%	62.5%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	2	1
Radius - distal	0	0
Calcaneus	1	0
Femur - proximal and distal	3	2
Tibia - proximal	2	1
	8	4
Percent of Age Range	66.7%	33.3%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F102.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Cross Street Feature 4 Phase I-2

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	0
Radius - distal	0	0
Calcaneus	0	0
Femur - proximal and distal	0	0
Tibia - proximal	1	0
	1	0
Percent of Age Range	100.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F103.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Cross Street Feature 4 Phase I-3

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	0
Radius - distal	0	0
Calcaneus	0	0
Femur - proximal and distal	0	0
Tibia - proximal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F104.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Cross Street Feature 4 Phase I-5

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	1	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	1
Metatarsal - distal	1	0
Metapodial - distal	0	2
Tibia - distal	1	0
	2	3
Percent of Age Range	40.0%	60.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	1	0
Radius - distal	0	0
Calcaneus	0	0
Femur - proximal and distal	0	0
Tibia - proximal	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F105.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Cross Street Feature 4 Phase I-7

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	1	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	0
Radius - distal	0	0
Calcaneus	1	0
Femur - proximal and distal	0	0
Tibia - proximal	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F106.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Cross Street Feature 4 Phase I-8

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	1	2
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	1	2
Percent of Age Range	33.3%	66.7%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	1	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	1	0
Radius - distal	0	0
Calcaneus	0	0
Femur - proximal and distal	2	1
Tibia - proximal	0	1
	3	2
Percent of Age Range	60.0%	40.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F107.
Age Groups
Ovis aries/Capra hircus (Domestic Sheep/Goat)
Cross Street Feature 4 Phase I-10

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	1	0
Humerus - distal	1	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	2	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	1
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	0	1
	0	2
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	1
Radius - distal	0	0
Calcaneus	0	0
Femur - proximal and distal	1	1
Tibia - proximal	1	0
	2	2
Percent of Age Range	50.0%	50.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F108.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Cross Street Back Lot Phase II

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	2	0
Humerus - distal	0	0
Radius - proximal	2	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	4	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	2	0
Metatarsal - distal	0	1
Metapodial - distal	0	0
Tibia - distal	2	1
	4	2
Percent of Age Range	66.7%	33.3%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	1
Radius - distal	0	1
Calcaneus	0	0
Femur - proximal and distal	1	4
Tibia - proximal	0	0
	1	6
Percent of Age Range	14.3%	85.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F109.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Cross Street Feature 4 Phase II

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	3	0
Humerus - distal	7	0
Radius - proximal	1	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	11	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	2	2
	2	2
Percent of Age Range	50.0%	50.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	4	6
Radius - distal	1	1
Calcaneus	2	1
Femur - proximal and distal	4	9
Tibia - proximal	0	3
	11	20
Percent of Age Range	35.5%	64.5%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F110.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Cross Street Feature 4 Phase II-1

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	3	0
Humerus - distal	3	0
Radius - proximal	1	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	7	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	0	2
	0	2
Percent of Age Range	0.0%	100.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	6
Radius - distal	1	0
Calcaneus	2	1
Femur - proximal and distal	3	3
Tibia - proximal	0	1
	6	11
Percent of Age Range	35.3%	64.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F111.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Cross Street Feature 4 Phase II-2

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	1	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	1	0
	1	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	1	0
Radius - distal	0	0
Calcaneus	0	0
Femur - proximal and distal	0	2
Tibia - proximal	0	0
	1	2
Percent of Age Range	33.3%	66.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F112.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Cross Street Feature 4 Phase II-3

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	3	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	3	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	1	0
	1	0
Percent of Age Range	100.%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	3	0
Radius - distal	0	1
Calcaneus	0	0
Femur - proximal and distal	1	4
Tibia - proximal	0	2
	4	7
Percent of Age Range	36.4%	63.6%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F113.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Cross Street Back Lot Phase III

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	3	0
Humerus - distal	8	1
Radius - proximal	1	2
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	12	3
Percent of Age Range	80.0%	20.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	1	1
Metacarpal - distal	6	1
Metatarsal - distal	3	0
Metapodial - distal	0	0
Tibia - distal	2	0
	12	2
Percent of Age Range	85.7%	14.3%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	1	3
Radius - distal	1	1
Calcaneus	3	0
Femur - proximal and distal	2	6
Tibia - proximal	0	3
	7	13
Percent of Age Range	35.0%	65.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F114.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Cross Street Back Lot Phase IV

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	0	0
Humerus - distal	0	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	0	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	0
Radius - distal	0	0
Calcaneus	0	0
Femur - proximal and distal	0	0
Tibia - proximal	0	0
	0	0
Percent of Age Range	0.0%	0.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F115.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Cross Street Back Lot Phase V

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	2	1
Humerus - distal	2	0
Radius - proximal	3	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	7	1
Percent of Age Range	87.5%	12.5%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	1	2
Metacarpal - distal	3	0
Metatarsal - distal	0	1
Metapodial - distal	0	0
Tibia - distal	1	1
	5	4
Percent of Age Range	55.6%	44.4%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	4
Radius - distal	0	1
Calcaneus	0	1
Femur - proximal and distal	1	3
Tibia - proximal	0	0
	1	9
Percent of Age Range	10.0%	90.0%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F116.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Mill Pond Phase I

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	2	1
Humerus - distal	4	0
Radius - proximal	2	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	8	1
Percent of Age Range	88.9%	11.1%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	1	0
Metacarpal - distal	0	0
Metatarsal - distal	0	0
Metapodial - distal	0	0
Tibia - distal	2	0
	3	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	1	0
Radius - distal	1	0
Calcaneus	1	0
Femur - proximal and distal	4	4
Tibia - proximal	2	1
	9	5
Percent of Age Range	64.3%	35.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F117.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Mill Pond Phase III

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	1	0
Humerus - distal	1	0
Radius - proximal	0	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	2	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	2	0
Metatarsal - distal	2	0
Metapodial - distal	0	0
Tibia - distal	0	0
	4	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	0
Radius - distal	0	0
Calcaneus	0	1
Femur - proximal and distal	2	0
Tibia - proximal	0	0
	2	1
Percent of Age Range	66.7%	33.3%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F118.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Mill Pond Phase IIIa

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	2	0
Humerus - distal	2	0
Radius - proximal	3	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	7	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	0
Metacarpal - distal	1	0
Metatarsal - distal	7	0
Metapodial - distal	0	0
Tibia - distal	2	7
	10	7
Percent of Age Range	58.8%	41.2%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	3
Radius - distal	0	2
Calcaneus	1	4
Femur - proximal and distal	0	1
Tibia - proximal	0	5
	1	15
Percent of Age Range	6.3%	93.8%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F119.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Mill Pond Phase IV

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	2	0
Humerus - distal	2	0
Radius - proximal	1	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	5	0
Percent of Age Range	100.0%	0.0%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	0	1
Metacarpal - distal	1	2
Metatarsal - distal	1	0
Metapodial - distal	0	0
Tibia - distal	4	0
	6	3
Percent of Age Range	66.7%	33.3%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	1	1
Radius - distal	1	1
Calcaneus	0	0
Femur - proximal and distal	2	0
Tibia - proximal	0	1
	3	3
Percent of Age Range	57.1%	42.9%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Table F120.
Age Groups
***Ovis aries/Capra hircus* (Domestic Sheep/Goat)**
Mill Pond Phase V

Age of Fusion - 6 to 18 Months

Bone and Epiphysis	Fused	Not Fused
Scapula	3	1
Humerus - distal	3	0
Radius - proximal	6	0
First Phalange - proximal and dist	0	0
Second Phalange - distal	0	0
	12	1
Percent of Age Range	92.3%	7.7%

Age of Fusion - 18 to 30 Months

Bone and Epiphysis	Fused	Not Fused
Ulna - proximal and distal	1	3
Metacarpal - distal	0	0
Metatarsal - distal	0	1
Metapodial - distal	0	0
Tibia - distal	4	1
	5	5
Percent of Age Range	50.0%	50.0%

Age of Fusion - 30 to 42 Months

Bone and Epiphysis	Fused	Not Fused
Humerus - proximal	0	3
Radius - distal	3	1
Calcaneus	1	2
Femur - proximal and distal	1	4
Tibia - proximal	0	0
	5	10
Percent of Age Range	33.3%	66.7%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

APPENDIX G.

OSTEOLOGICAL MEASUREMENTS

Table G1.
Osteological Measurements
Sus scrofa (Domestic Pig)

Site	UB No	Lot No	Element	Descript	Measurement (mm)
CSB	425	6196	Maxilla	32	16.1
PA	2369	4197	Maxilla	30	25.8
PA	2369	4197	Maxilla	31	16.1
PA	2462	4133	Mandible	9a	37.2
CSB	11124	6398	Mandible	#8	71.1
CSB	11124	6398	Mandible	#16a	56.9
CSB	10136	6364	Mandible	#16a	53.6
PA	5808	4526	Upper molar 3	10L	29.7
PA	5808	4526	Upper molar 3	10B	13.3
PA	6330	4535	Upper molar 3	10L	29.0
PA	6330	4535	Upper molar 3	10B	12.4
PA	6524	4375	Upper molar 3	30	30.0
PA	6524	4375	Upper molar 3	31	13.5
PA	6785	4144	Upper molar 3	10L	31.1
PA	6785	4144	Upper molar 3	10B	14.5
PA	2351	4152	Lower molar 3	10L	33.4
PA	2351	4152	Lower molar 3	10B	14.6
PA	2702	4133	Lower molar 3	10L	35.8
PA	2702	4133	Lower molar 3	10B	13.6
CSB	5605	6180	Molar 3	L	33.6
CSB	5605	6180	Molar 3	B	15.1
MP	1634	8085	Molar 3	L	32.0
MP	1634	8085	Molar 3	B	11.2
MP	1634	8085	Molar 3	L	30.0
MP	1634	8085	Molar 3	B	11.4
CSB	11124	6398	Molar 3	L	32.6
CSB	11124	6398	Molar 3	B	15.5
CSB	10136	6364	Molar 3	L	32.3
CSB	10136	6364	Molar 3	B	16.1
CSB	762	6047	Atlas	GL	51.2
CSB	762	6047	Atlas	BFcr	62.0
PA	6935	4480	Axis	LCDe	65.0
PA	6935	4480	Axis	SBV	30.9
PA	32	4496	Innominate	LA	34.2
PA	32	4496	Innominate	LAR	30.2
PA	43	4496	Innominate	LA	32.0
PA	43	4496	Innominate	LAR	27.2
PA	271	4154	Scapula	SLC	28.0
PA	271	4154	Scapula	GLP	41.3
PA	271	4154	Scapula	LG	37.2
PA	2307	4177	Scapula	SLC	23.4
PA	2307	4177	Scapula	BG	27.1
MP	1853	8330	Scapula	GLP	39.0

Table G1 (cont'd).
Osteological Measurements
***Sus scrofa* (Domestic Pig)**

Site	UB No	Lot No	Element	Descript	Measure-ment (mm)
MP	1853	8330	Scapula	SLC	24.3
MP	1187	8335	Scapula	GLP	38.5
MP	1187	8335	Scapula	SLC	28.6
PA	993	4218	Humerus	Bd	41.7
PA	993	4218	Humerus	BT	30.9
PA	2148	4159	Humerus	SD	15.9
PA	2196	4159	Humerus	Bd	42.4
CSB	4286	6067	Humerus	SD	19.1
CSB	4286	6067	Humerus	CD	74.2
CSB	5496	6180	Humerus	Bp	62.3
PA	6086	4456	Humerus	Bd	39.1
PA	6086	4456	Humerus	BT	32.2
MP	1565	8387	Humerus	Bd	42.0
CSB	365	6192	Radius	Bp	37.9
CSB	365	6192	Radius	SD	13.0
CSB	365	6192	Radius	SD	18.0
CSB	365	6192	Radius	CD	50.6
CSB	365	6192	Radius	Bd	27.9
CSB	368	6192	Radius	Bp	28.3
CSB	368	6192	Radius	SD	12.9
CSB	368	6192	Radius	Bd	28.2
PA	4399	4404	Radius	Bd	29.0
PA	6560	4190	Radius	Bd	29.5
PA	6560	4190	Radius	BFd	27.5
MP	1821	8330	Radius	SD	19.7
MP	1857	8330	Radius	SD	19.6
MP	1528	8100	Radius	Bp	28.5
MP	1528	8100	Radius	Bp	28.5
CSB	11877	6681	Radius	Bp	31.5
CSB	427	6196	Ulna	BPC	22.8
PA	2150	4159	Ulna	DPA	37.6
PA	2150	4159	Ulna	SDO	39.2
PA	2150	4159	Ulna	BPC	21.1
PA	6136	4523	Ulna	DPA	38.5
PA	6136	4523	Ulna	SDO	30.9
PA	6136	4523	Ulna	BPc	21.6
PA	6676	4144	Ulna	DPA	34.7
PA	6676	4144	Ulna	SDO	28.0
PA	6676	4144	Ulna	BPC	20.9
PA	2568	4427	Metacarpal III	Bp	15.5
PA	3016	4445	Metacarpal IV	GL	82.9
PA	3016	4445	Metacarpal IV	Bp	19.8
PA	3016	4445	Metacarpal IV	B	15.8

Table G1 (cont'd).
Osteological Measurements
***Sus scrofa* (Domestic Pig)**

Site	UB No	Lot No	Element	Descript	Measurement (mm)
PA	3016	4445	Metacarpal IV	Bd	18.9
PA	6892	4075	Metacarpal IV	GL	79.3
PA	6892	4075	Metacarpal IV	B	14.1
PA	6892	4075	Metacarpal IV	Bd	19.0
PA	6920	4493	Metacarpal IV	Bp	22.3
MP	1738	8088	Metacarpal IV	Bp	16.5
MP	1598	8085	Metacarpal IV	Bp	18.5
MP	1658	8554	Metacarpal IV	Bp	9.5
PA	6342	4650	Metacarpal V	GL	58.5
PA	9	4262	Femur	SD	16.7
PA	9	4262	Femur	Bd	40.0
PA	2426	4428	Femur	SD	16.3
PA	4375	4368	Femur	Bd	42.8
CSB	431	6027	Tibia	Bd	32.6
CSB	431	6027	Tibia	Dd	29.5
CSB	431	6027	Tibia	Bd	31.1
PA	1823	4155	Tibia	SD	20.1
PA	1823	4155	Tibia	Bd	30.3
PA	2217	4176	Tibia	Bp	51.1
PA	3113	4616	Tibia	SD	19.8
PA	4365	4368	Tibia	Bd	33.1
PA	4582	4395	Tibia	SD	16.3
PA	4582	4395	Tibia	Bd	31.0
PA	4198	4471	Metatarsal III	Bd	20.7
MP	1808	8333	Metatarsal III	GL	86.0
MP	1808	8333	Metatarsal III	Lep	85.5
MP	1808	8333	Metatarsal III	Bp	18.5
MP	1808	8333	Metatarsal III	Bd	21.0
MP	1808	8333	Metatarsal III	B	16.1
MP	1573	8387	Metatarsal III	Bp	17.0
MP	1573	8387	Metatarsal III	GLpe	41.5
MP	1573	8387	Metatarsal III	GL	42.0
MP	1573	8387	Metatarsal III	Bp	19.5
MP	1573	8387	Metatarsal III	Bd	18.0
MP	1573	8387	Metatarsal III	SD	14.3
MP	1573	8387	Metatarsal III	Bp	17.0
MP	1666	8075	Metatarsal III	Bp	16.5
PA	6675	4144	Metatarsal IV	Bp	16.0
CSB	4250	6104	Calcaneus	GB	25.5
PA	2316	4177	First phalanx	GLpe	16.2
PA	2316	4177	First phalanx	SD	5.4
PA	4321	4352	First phalanx	GLpe	36.1
PA	4321	4352	First phalanx	Bp	16.7

Table G1 (cont'd).
Osteological Measurements
***Sus scrofa* (Domestic Pig)**

Site	UB No	Lot No	Element	Descript	Measurement (mm)
PA	4321	4352	First phalanx	SD	14.0
PA	4321	4352	First phalanx	Bd	17.4
PA	6945	4480	First phalanx	GLpe	39.1
PA	6945	4480	First phalanx	Bp	18.3
PA	6945	4480	First phalanx	SD	15.4
PA	6945	4480	First phalanx	Bd	16.9
MP	1815	8333	First phalanx	GLpe	41.0
MP	1815	8333	First phalanx	GL	42.0
MP	1815	8333	First phalanx	Bp	20.0
MP	1815	8333	First phalanx	Bd	19.0
MP	1815	8333	First phalanx	SD	15.4
MP	1216	8335	First phalanx	GLpe	39.5
MP	1216	8335	First phalanx	GL	40.0
MP	1216	8335	First phalanx	Bp	19.0
MP	1216	8335	First phalanx	Bd	17.0
MP	1216	8335	First phalanx	SD	14.4
MP	1626	8085	First phalanx	GLpe	41.6
MP	1626	8085	First phalanx	GL	42.0
MP	1626	8085	First phalanx	Bp	19.5
MP	1626	8085	First phalanx	Bd	18.0
MP	1626	8085	First phalanx	SD	14.1
PA	2267	4176	Second phalanx	SD	12.1
PA	2267	4176	Second phalanx	Bd	12.7
PA	2267	4176	Second phalanx	GLpe	25.4
CSB	2836	6044	Second phalanx	GL	28.1
CSB	2836	6044	Second phalanx	Bp	18.9
CSB	2836	6044	Second phalanx	SD	15.8
CSB	2836	6044	Second phalanx	Bd	15.8
PA	3054	4181	Second phalanx	GL	24.3
PA	3054	4181	Second phalanx	Bp	16.6
PA	3054	4181	Second phalanx	SD	13.3
PA	3054	4181	Second phalanx	Bd	14.9
PA	4328	4352	Second phalanx	GL	27.4
PA	4328	4352	Second phalanx	Bp	16.5
PA	4328	4352	Second phalanx	SD	13.6
PA	4328	4352	Second phalanx	Bd	14.5
CSB	5480	6166	Second phalanx	SD	14.8
CSB	5480	6166	Second phalanx	Bd	16.0
CSB	5480	6166	Second phalanx	GLpe	24.8
PA	6523	4375	Second phalanx	GL	29.7
PA	6523	4375	Second phalanx	Bp	18.0
PA	6523	4375	Second phalanx	SD	15.5
PA	6523	4375	Second phalanx	Bd	16.2

Table G2.
Osteological Measurements
***Bos taurus* (Domestic Cow)**

Site	UB No	Lot No	Element	Descript	Measure-ment (mm)
PA	807	4562	Occipital	29	36.9
PA	807	4562	Occipital	26	99.5
CSB	11130	6398	Occipital	#28	47.0
CSB	11130	6398	Occipital	#29	40.0
CSB	2925	6052	Mandible	12	142.0
CSB	2925	6052	Mandible	13	150.6
CSB	2925	6052	Mandible	3	116.1
CSB	2925	6052	Mandible	15a	69.8
CSB	2925	6052	Mandible	15b	44.0
CSB	2925	6052	Mandible	15c	35.6
CSB	2925	6052	Mandible	7	136.5
CSB	2925	6052	Mandible	8	89.2
CSB	2925	6052	Mandible	9	47.4
CSB	2925	6052	Mandible	11	99.3
CSB	2925	6052	Mandible	6	301.2
CSB	2925	6052	Mandible	L	31.9
CSB	2925	6052	Mandible	B	11.2
CSB	2927	6052	Mandible	6	301.4
CSB	2927	6052	Mandible	14	196.0
CSB	2927	6052	Mandible	12	153.2
CSB	2927	6052	Mandible	13	143.2
CSB	2927	6052	Mandible	3	115.8
CSB	2927	6052	Mandible	5	250.0
CSB	2927	6052	Mandible	7	137.2
CSB	2927	6052	Mandible	8	88.7
CSB	2927	6052	Mandible	9	48.1
CSB	2927	6052	Mandible	11	88.9
CSB	2927	6052	Mandible	15a	69.7
CSB	2927	6052	Mandible	15b	45.7
CSB	2927	6052	Mandible	15c	33.5
CSB	2927	6052	Mandible	B	11.3
CSB	2927	6052	Mandible	L	32.0
PA	6074	4602	Mandible	15c	35.1
PA	7675	4102	Lower molar 3	10L	36.2
PA	7675	4102	Lower molar 3	10B	13.8
CSB	5644	6104	Molar 3	L	28.5
CSB	5644	6104	Molar 3	B	10.0
CSB	5672	6180	Molar 3	L	34.6
CSB	5672	6180	Molar 3	B	14.3
PA	6992	4477	Innominate	BG	33.8
CSB	5482	6166	Scapula	GLP	64.9
MP	1595	8058	Scapula	BG	55.0
MP	1595	8058	Scapula	LG	58.0

Table G2 (cont'd).
Osteological Measurements
***Bos taurus* (Domestic Cow)**

Site	UB No	Lot No	Element	Descript	Measure-ment (mm)
MP	1595	8058	Scapula	GLP	72.0
MP	1582	8387	Scapula	BG	49.0
MP	1582	8387	Scapula	LG	56.0
MP	1582	8387	Scapula	GLP	67.0
CSB	10992	6396	Scapula	GLP	79.0
CSB	10992	6396	Scapula	LG	69.0
PA	846	4201	Humerus	BT	70.4
MP	146	8139	Humerus	BT	86.0
MP	146	8139	Humerus	Bd	99.0
CSB	12108	6772	Humerus	BT	80.3
CSB	12108	6772	Humerus	Bd	93.0
CSB	11874	6681	Humerus	BT	69.9
PA	845	4201	Radius	BFp	66.9
PA	845	4201	Radius	Bp	71.3
PA	3306	4339	Radius	DPA	76.5
CSB	5719	6108	Radius	Bd	78.4
CSB	5719	6108	Radius	BFd	76.0
PA	5909	4125	Radius	BFp	75.6
PA	5909	4125	Radius	Bp	82.0
PA	5937	4216	Radius	BFp	82.6
PA	5937	4216	Radius	Bp	89.3
PA	6501	4346	Radius	Bd	83.5
PA	7850	4024	Radius	BP	95.4
PA	7850	4024	Radius	BFp	85.7
CSB	10783	6387	Radius	Bp	90.5
CSB	10784	6387	Radius	Bd	86.0
CSB	11729	6590	Radius	Bd	68.0
CSB	11912	6699	Radius	Bp	89.0
CSB	11912	6699	Radius	BFp	80.1
CSB	12344	6792	Radius	Bp	74.5
PA	1885	4334	Main metacarpal	Bp	63.9
PA	1885	4334	Main metacarpal	GL	211.0
PA	1885	4334	Main metacarpal	SD	41.7
PA	6551	4538	Main metacarpal	Bd	68.4
PA	6701	4144	Main metacarpal	Bd	63.4
CSB	347	6192	Metacarpal	Bd	65.3
PA	2080	4431	Metacarpal	Bp	66.2
PA	2080	4431	Metacarpal	GL	212.0
PA	2080	4431	Metacarpal	SD	41.0
PA	2081	4431	Metacarpal	Bp	61.6
PA	2081	4431	Metacarpal	SD	37.6
CSB	5712	6108	Metacarpal	Bd	68.8

Table G2 (cont'd).
Osteological Measurements
***Bos taurus* (Domestic Cow)**

Site	UB No	Lot No	Element	Descript	Measure-ment (mm)
MP	243	8551	Metacarpal	GL	207.0
MP	243	8551	Metacarpal	Bd	63.0
MP	243	8551	Metacarpal	SD	38.3
CSB	11893	6686	Metacarpal	Bp	62.5
CSB	11893	6686	Metacarpal	Bd	66.0
CSB	11893	6686	Metacarpal	SD	33.9
CSB	11839	6667	Metacarpal	Bp	68.5
CSB	11839	6667	Metacarpal	Bd	69.5
CSB	11839	6667	Metacarpal	SD	39.6
PA	6950	4284	Femur	DC	50.6
CSB	360	6192	Tibia	Bd	61.2
PA	2425	4428	Tibia	Bd	67.0
PA	3203	4629	Tibia	Bd	69.3
PA	3236	4183	Tibia	Bd	73.6
PA	4682	4542	Tibia	Bd	66.8
CSB	5410	6169	Tibia	Bp	92.9
CSB	5475	6166	Tibia	Bd	67.6
CSB	5475	6166	Tibia	Dd	50.5
CSB	5494	6180	Tibia	Bd	65.1
CSB	5619	6180	Tibia	Bd	63.2
CSB	5619	6180	Tibia	Dd	46.0
PA	7582	4112	Tibia	Bd	57.7
MP	81	8260	Tibia	Bd	71.0
CSB	9684	6355	Tibia	Bd	57.0
CSB	12017	6753	Tibia	Bp	88.0
CSB	11617	6495	Tibia	Bd	57.5
CSB	11814	6652	Tibia	Bd	55.0
CSB	9684	6355	Tibia	Bd	57.0
CSB	9173	6344	Tibia	Bd	66.0
CSB	11857	6681	Tibia	Bp	108.0
CSB	11457	6429	Tibia	Bp	103.5
CSB	11495	6433	Tibia	Bd	77.0
CSB	10204	6365	Tibia	Bd	66.0
CSB	9759	6361	Tibia	Bd	58.0
PA	100	4580	Patella	GL	70.3
PA	100	4580	Patella	GB	62.7
PA	2285	4231	Patella	GL	67.6
PA	49	4496	Main metatarsal	Bd	50.7
PA	49	4496	Main metatarsal	Bp	46.6
PA	5978	4042	Main metatarsal	Bp	52.4
CSB	322	6315	Metatarsal	Bd	54.5
CSB	322	6315	Metatarsal	Bp	50.9
CSB	322	6315	Metatarsal	SD	30.1

Table G2 (cont'd).
Osteological Measurements
***Bos taurus* (Domestic Cow)**

Site	UB No	Lot No	Element	Descript	Measurement (mm)
PA	829	4569	Metatarsal	Bp	46.1
MP	1782	8633	Metatarsal	Bp	50.0
MP	1782	8633	Metatarsal	SD	32.0
CSB	11514	6446	Metatarsal	Bp	57.0
CSB	11514	6446	Metatarsal	Bd	63.0
CSB	11514	6446	Metatarsal	SD	32.7
CSB	11733	6590	Metatarsal	Bp	46.0
CSB	11733	6590	Metatarsal	Bd	51.0
CSB	11733	6590	Metatarsal	SD	26.0
CSB	11838	6667	Metatarsal	Bp	47.0
CSB	11838	6667	Metatarsal	Bd	51.5
CSB	11838	6667	Metatarsal	SD	26.1
CSB	9051	6332	Metatarsal	Bp	42.5
CSB	9051	6332	Metatarsal	SD	23.9
CSB	10909	6388	Metatarsal	Bp	50.1
CSB	10909	6388	Metatarsal	Bd	54.0
CSB	10909	6388	Metatarsal	GL	214.8
CSB	10909	6388	Metatarsal	SD	30.0
CSB	10908	6388	Metatarsal	GL	222.0
CSB	10908	6388	Metatarsal	Bp	49.0
CSB	10908	6388	Metatarsal	Bd	53.0
CSB	10908	6388	Metatarsal	SD	24.4
CSB	10919	6388	Metatarsal	Bp	50.0
CSB	10919	6388	Metatarsal	Bd	54.0
CSB	10919	6388	Metatarsal	GL	214.0
CSB	10919	6388	Metatarsal	SD	30.0
PA	6412	4018	Fused tarsal c + 4	GB	63.6
PA	1824	4155	Astragalus	GLl	73.9
PA	1824	4155	Astragalus	GLm	67.5
PA	1824	4155	Astragalus	Dl	42.0
PA	2142	4153	Astragalus	GLm	60.8
PA	2142	4153	Astragalus	Dm	35.8
PA	2492	4133	Astragalus	GLl	67.2
PA	2492	4133	Astragalus	GLm	62.9
PA	2492	4133	Astragalus	Bd	46.0
PA	2492	4133	Astragalus	Dl	39.0
PA	4109	4542	Astragalus	GLl	66.8
PA	4109	4542	Astragalus	GLm	63.7
PA	4109	4542	Astragalus	Bd	50.0
PA	4109	4542	Astragalus	Dl	39.5
PA	4109	4542	Astragalus	Dm	40.0
PA	4561	4559	Astragalus	GLl	80.4
PA	4561	4559	Astragalus	GLm	72.8

Table G2 (cont'd).
Osteological Measurements
***Bos taurus* (Domestic Cow)**

Site	UB No	Lot No	Element	Descript	Measurement (mm)
PA	4561	4559	Astragalus	Bd	52.8
PA	4561	4559	Astragalus	DI	46.0
PA	964	4167	Calcaneus	GL	125.5
MP	36	8404	Calcaneus	GB	51.0
MP	36	8404	Calcaneus	GL	149.0
CSB	11935	6716	Calcaneus	GB	46.5
CSB	11935	6716	Calcaneus	GL	147.5
CSB	11898	6686	Calcaneus	Bp	45.0
CSB	11898	6686	Calcaneus	GL	130.0
PA	2293	4177	First phalanx	GLpe	66.4
PA	2293	4177	First phalanx	Bp	35.2
PA	2293	4177	First phalanx	Bd	33.7
PA	2293	4177	First phalanx	SD	30.8
PA	2536	4442	First phalanx	GLpe	66.9
PA	2536	4442	First phalanx	Bp	31.7
PA	2536	4442	First phalanx	Bd	30.3
PA	2536	4442	First phalanx	SD	25.6
PA	3114	4616	First phalanx	Bd	34.9
PA	3114	4616	First phalanx	SD	28.9
PA	4363	4368	First phalanx	GLpe	62.2
PA	4528	4559	First phalanx	GLpe	65.5
CSB	5381	6158	First phalanx	GLpe	62.4
CSB	5620	6180	First phalanx	GLpe	61.3
PA	6090	4456	First phalanx	GLpe	67.1
PA	6090	4456	First phalanx	Bp	31.7
PA	6090	4456	First phalanx	SD	26.0
PA	6090	4456	First phalanx	Bd	29.8
PA	6158	4523	First phalanx	GLpe	48.6
PA	6158	4523	First phalanx	Bp	26.0
PA	6158	4523	First phalanx	SD	22.6
PA	6158	4523	First phalanx	Bd	25.7
PA	6226	4209	First phalanx	GLpe	56.1
PA	6226	4209	First phalanx	Bp	28.6
PA	6226	4209	First phalanx	SD	24.6
PA	6226	4209	First phalanx	Bd	28.0
PA	6465	4530	First phalanx	GLpe	62.7
PA	6465	4530	First phalanx	Bp	38.0
PA	6465	4530	First phalanx	SD	30.9
PA	6465	4530	First phalanx	Bd	38.2
PA	6818	4090	First phalanx	GLpe	61.3
PA	7819	4101	First phalanx	GLpe	61.3
PA	7819	4101	First phalanx	Bp	36.5
PA	7819	4101	First phalanx	SD	31.6

Table G2 (cont'd).
Osteological Measurements
***Bos taurus* (Domestic Cow)**

Site	UB No	Lot No	Element	Descript	Measurement (mm)
PA	7819	4101	First phalanx	Bd	33.4
MP	1596	8058	First phalanx	GLpe	57.0
MP	1596	8058	First phalanx	GL	57.0
MP	1596	8058	First phalanx	Bp	29.0
MP	1596	8058	First phalanx	Bd	27.5
MP	1596	8058	First phalanx	SD	25.3
MP	1502	8058	First phalanx	GLpe	67.5
MP	1502	8058	First phalanx	GL	68.5
MP	1502	8058	First phalanx	Bp	35.5
MP	1502	8058	First phalanx	Bd	32.0
MP	1502	8058	First phalanx	SD	28.6
CSB	11527	6446	First phalanx	GLpe	63.5
CSB	11527	6446	First phalanx	GL	64.5
CSB	11527	6446	First phalanx	Bp	34.0
CSB	11527	6446	First phalanx	Bd	32.0
CSB	11527	6446	First phalanx	SD	28.7
CSB	10487	6380	First phalanx	GLpe	67.0
CSB	10487	6380	First phalanx	GL	67.0
CSB	10487	6380	First phalanx	Bp	33.0
CSB	10487	6380	First phalanx	Bd	31.0
CSB	10487	6380	First phalanx	SD	27.2
CSB	10935	6389	First phalanx	GLpe	62.0
CSB	10935	6389	First phalanx	GL	63.0
CSB	10935	6389	First phalanx	Bp	36.0
CSB	10935	6389	First phalanx	Bd	32.5
CSB	10935	6389	First phalanx	SD	29.3
CSB	10064	6364	First phalanx	GLpe	60.5
CSB	10064	6364	First phalanx	GL	61.5
CSB	10064	6364	First phalanx	Bp	31.0
CSB	10064	6364	First phalanx	Bd	30.0
CSB	10064	6364	First phalanx	SD	26.4
PA	11	4262	Second phalanx	GL	41.4
PA	11	4262	Second phalanx	Bp	31.9
PA	11	4262	Second phalanx	Bd	29.5
PA	11	4262	Second phalanx	SD	24.9
CSB	781	6052	Second phalanx	GL	39.0
CSB	781	6052	Second phalanx	SD	19.0
CSB	781	6052	Second phalanx	Bd	20.6
PA	2283	4231	Second phalanx	GL	46.7
PA	2283	4231	Second phalanx	Bp	36.0
PA	2283	4231	Second phalanx	Bd	30.4
PA	2283	4231	Second phalanx	SD	27.9
PA	3276	4500	Second phalanx	GL	40.6

Table G2 (cont'd).
Osteological Measurements
***Bos taurus* (Domestic Cow)**

Site	UB No	Lot No	Element	Descript	Measurement (mm)
PA	3276	4500	Second phalanx	SD	25.0
PA	3276	4500	Second phalanx	Bp	31.3
PA	3276	4500	Second phalanx	Bd	25.0
PA	4364	4368	Second phalanx	GL	42.7
PA	4364	4368	Second phalanx	SD	27.0
PA	4364	4368	Second phalanx	Bd	30.4
CSB	5203	6141	Second phalanx	Bd	25.7
CSB	5203	6141	Second phalanx	SD	24.0
CSB	5203	6141	Second phalanx	GL	41.0
CSB	5340	6108	Second phalanx	Bd	26.0
CSB	5340	6108	Second phalanx	SD	25.1
CSB	5340	6108	Second phalanx	GL	42.2
CSB	5340	6108	Second phalanx	Bp	32.7
CSB	5368	6158	Second phalanx	Bd	26.0
CSB	5368	6158	Second phalanx	SD	23.5
CSB	5368	6158	Second phalanx	GL	42.7
CSB	5368	6158	Second phalanx	Bp	31.3
PA	6506	4346	Second phalanx	GL	38.9
PA	6506	4346	Second phalanx	Bp	33.9
PA	6506	4346	Second phalanx	SD	26.9
MP	1637	8042	Second phalanx	GL	44.5
MP	1637	8042	Second phalanx	Bp	31.0
MP	1637	8042	Second phalanx	Bd	26.0
MP	1637	8042	Second phalanx	SD	24.4
MP	1679	8049	Second phalanx	GL	43.0
MP	1679	8049	Second phalanx	Bp	30.5
MP	1679	8049	Second phalanx	Bd	24.0
MP	1679	8049	Second phalanx	SD	24.5
MP	228	8274	Second phalanx	GL	47.0
MP	228	8274	Second phalanx	Bp	35.5
MP	228	8274	Second phalanx	Bd	29.5
MP	228	8274	Second phalanx	SD	28.8
MP	1597	8058	Second phalanx	GL	37.5
MP	1597	8058	Second phalanx	Bp	29.0
MP	1597	8058	Second phalanx	Bd	24.0
MP	1597	8058	Second phalanx	SD	22.3
MP	1651	8062	Second phalanx	GL	45.0
MP	1651	8062	Second phalanx	Bp	34.0
MP	1651	8062	Second phalanx	Bd	31.0
MP	1651	8062	Second phalanx	SD	28.0
CSB	9052	6332	Second phalanx	Bp	29.0
CSB	9052	6332	Second phalanx	Bd	25.0
CSB	9052	6332	Second phalanx	SD	23.1

Table G2 (cont'd).
Osteological Measurements
***Bos taurus* (Domestic Cow)**

Site	UB No	Lot No	Element	Descript	Measure-ment (mm)
CSB	9853	6362	Second phalanx	GL	40.0
CSB	9853	6362	Second phalanx	Bp	28.0
CSB	9853	6362	Second phalanx	Bd	23.0
CSB	9853	6362	Second phalanx	SD	21.5
CSB	10290	6366	Second phalanx	GL	44.5
CSB	10290	6366	Second phalanx	Bp	33.0
CSB	10290	6366	Second phalanx	Bd	26.0
CSB	10290	6366	Second phalanx	SD	25.7
CSB	10993	6396	Second phalanx	GL	42.0
CSB	10993	6396	Second phalanx	Bp	33.0
CSB	10993	6396	Second phalanx	Bd	31.5
CSB	10993	6396	Second phalanx	SD	27.7
CSB	11320	6410	Second phalanx	GL	43.0
CSB	11320	6410	Second phalanx	Bp	34.0
CSB	11320	6410	Second phalanx	Bd	30.5
CSB	11320	6410	Second phalanx	SD	27.0
CSB	10939	6389	Second phalanx	GL	42.0
CSB	10939	6389	Second phalanx	Bp	36.0
CSB	10939	6389	Second phalanx	Bd	32.0
CSB	10939	6389	Second phalanx	SD	27.7
CSB	387	6192	Third phalanx	GLpe	61.9
PA	4300	4352	Third phalanx	MBS	32.5
PA	4371	4368	Third phalanx	MBS	31.9

Table G3.
Osteological Measurements
***Ovis aries* (Domestic Sheep)**

Site	UB No	Lot No	Element	Descript	Measure-ment (mm)
CSB	772	6052	Innominate	LA	32.8
CSB	772	6052	Innominate	LAR	27.0
CSB	772	6052	Innominate	LFo	41.2
PA	6446	4530	Innominate	LA	30.1
PA	6446	4530	Innominate	LAR	25.5
PA	6446	4530	Innominate	LS	51.9
PA	6446	4530	Innominate	SH	16.1
PA	6446	4530	Innominate	SB	9.6
PA	6446	4530	Innominate	LFo	38.5
CSB	11133	6398	Scapula	GLP	33.5
CSB	11133	6398	Scapula	LG	26.2
CSB	11133	6398	Scapula	SLC	18.1
CSB	10169	6365	Scapula	GLP	34.5
CSB	10169	6365	Scapula	LG	24.5
CSB	10169	6365	Scapula	SLC	20.9
CSB	11569	6446	Scapula	GLP	32.0
CSB	11569	6446	Scapula	BG	20.0
CSB	11569	6446	Scapula	SLC	20.4
CSB	11651	6522	Scapula	GLP	38.0
CSB	11651	6522	Scapula	BG	24.0
CSB	11651	6522	Scapula	LG	27.4
CSB	11651	6522	Scapula	SLC	22.2
CSB	467	6040	Humerus	Bp	34.1
CSB	467	6040	Humerus	BT	33.4
PA	2202	4159	Humerus	Bd	34.8
PA	2202	4159	Humerus	BT	32.0
PA	2545	4427	Humerus	SD	17.4
PA	2545	4427	Humerus	Bd	32.9
PA	2545	4427	Humerus	BT	32.8
PA	4673	4542	Humerus	SD	14.7
PA	4673	4542	Humerus	Bd	30.2
PA	4673	4542	Humerus	BT	27.6
PA	6080	4456	Humerus	SD	16.8
PA	6080	4456	Humerus	Bd	33.5
PA	6244	4319	Humerus	Bd	29.3
PA	6253	4319	Humerus	Bd	32.8
PA	6260	4319	Humerus	Bd	32.7
PA	6441	4530	Humerus	Bd	30.6
PA	6441	4530	Humerus	BT	29.5
PA	7657	4102	Humerus	SD	15.5
PA	7657	4102	Humerus	Bd	31.2
PA	7657	4102	Humerus	BT	30.9
PA	7855	4024	Humerus	Bd	31.2

Table G3 (cont'd).
Osteological Measurements
***Ovis aries* (Domestic Sheep)**

Site	UB No	Lot No	Element	Descript	Measurement (mm)
PA	7855	4024	Humerus	BT	27.2
MP	1579	8387	Humerus	BT	30.1
MP	1579	8387	Humerus	Bd	31.5
MP	1607	8058	Humerus	BT	29.4
MP	1607	8058	Humerus	Bd	31.0
MP	1784	8333	Humerus	Bd	37.5
CSB	11091	6396	Humerus	BT	32.1
CSB	11091	6396	Humerus	Bd	36.0
CSB	10304	6366	Humerus	BT	29.7
CSB	10304	6366	Humerus	Bd	32.0
CSB	10304	6366	Humerus	SD	14.2
CSB	9815	6362	Humerus	BT	32.4
CSB	9815	6362	Humerus	Bd	34.5
CSB	11896	6686	Humerus	BT	28.0
CSB	11896	6686	Humerus	Bd	31.0
CSB	11896	6686	Humerus	Bp	40.0
CSB	11896	6686	Humerus	SD	16.2
CSB	11460	6429	Humerus	BT	26.9
CSB	11460	6429	Humerus	Bd	29.0
CSB	11460	6429	Humerus	SD	15.3
CSB	9260	6344	Humerus	BT	30.2
CSB	9260	6344	Humerus	Bd	32.5
CSB	9260	6344	Humerus	SD	18.1
CSB	9260	6344	Humerus	Bp	41.5
CSB	9260	6344	Humerus	GL	40.5
CSB	9261	6344	Humerus	BT	27.0
CSB	9261	6344	Humerus	Bd	30.0
CSB	9261	6344	Humerus	SD	13.1
CSB	9261	6344	Humerus	Bp	38.5
CSB	9263	6344	Humerus	Bp	35.0
CSB	10903	6387	Humerus	BT	31.1
CSB	10903	6387	Humerus	Bd	34.5
PA	4080	4114	Radius	Bp	29.9
PA	4080	4114	Radius	SD	15.4
PA	4080	4114	Radius	CD	39.9
PA	6084	4456	Radius	Bp	32.8
PA	6084	4456	Radius	BFp	30.0
PA	6139	4523	Radius	Bd	29.9
PA	6139	4523	Radius	BFd	24.8
PA	6141	4523	Radius	Bp	30.9
PA	6141	4523	Radius	BFp	27.9
PA	6232	4319	Radius	SD	16.0
PA	6232	4319	Radius	Bp	28.5

Table G3 (cont'd).
Osteological Measurements
***Ovis aries* (Domestic Sheep)**

Site	UB No	Lot No	Element	Descript	Measure-ment (mm)
PA	6232	4319	Radius	BFp	25.9
PA	6238	4319	Radius	SD	16.5
PA	6238	4319	Radius	Bp	28.7
PA	6238	4319	Radius	BFp	26.9
PA	6488	4520	Radius	Bp	31.9
PA	6488	4520	Radius	BFp	29.3
PA	7661	4102	Radius	Bp	30.6
PA	7661	4102	Radius	BFp	28.8
PA	7747	4101	Radius	Bp	30.0
PA	7747	4101	Radius	BFp	27.8
CSB	11088	6396	Radius	Bp	30.0
CSB	11088	6396	Radius	BFp	27.0
CSB	11088	6396	Radius	SD	14.9
CSB	11088	6396	Radius	Bd	29.0
PA	6135	4523	Ulna	DPA	26.8
PA	6135	4523	Ulna	BPC	19.4
PA	6146	4523	Ulna	LO	40.3
PA	6146	4523	Ulna	DPA	26.5
PA	6146	4523	Ulna	SDO	22.6
PA	6146	4523	Ulna	BPC	18.6
PA	5900	4258	Main metacarpal	Bp	22.1
PA	6076	4602	Main metacarpal	Bp	23.5
PA	6100	4456	Main metacarpal	Bp	23.6
PA	7504	4520	Main metacarpal	Bp	25.0
PA	6164	4523	Femur	Bp	43.7
PA	6164	4523	Femur	DC	20.9
CSB	11089	6396	Femur	Bd	34.5
CSB	11089	6396	Femur	Bp	42.0
CSB	11089	6396	Femur	SD	14.6
CSB	11654	6522	Femur	Bp	47.5
CSB	11654	6522	Femur	SD	16.0
PA	6092	4456	Tibia	Bd	27.8
PA	6144	4523	Tibia	Bd	29.4
PA	6203	4034	Tibia	Bd	24.6
PA	7523	4520	Tibia	Bd	25.3
PA	7569	4112	Tibia	Bd	23.8
PA	7569	4112	Tibia	SD	12.8
PA	7664	4102	Tibia	Bd	27.3
PA	7724	4101	Tibia	Bd	24.3
PA	7739	4101	Tibia	Bd	25.5
MP	1025	8331	Tibia	Bd	29.0
MP	1064	8331	Tibia	Bd	30.0
MP	1630	8085	Tibia	Bd	28.0

Table G3 (cont'd).
Osteological Measurements
***Ovis aries* (Domestic Sheep)**

Site	UB No	Lot No	Element	Descript	Measure-ment (mm)
MP	1570	8387	Tibia	Bd	29.0
CSB	9275	6344	Tibia	Bd	29.5
CSB	9275	6344	Tibia	SD	14.5
CSB	11709	6575	Tibia	Bd	29.0
CSB	10615	6381	Tibia	Bd	27.5
PA	4532	4559	Calcaneus	GL	59.7
PA	4532	4559	Calcaneus	GB	18.5
PA	5779	4407	Calcaneus	GL	55.4
PA	5779	4407	Calcaneus	GB	18.3
PA	7811	4101	Calcaneus	GL	55.7
PA	7811	4101	Calcaneus	GB	17.9
MP	1078	8331	Calcaneus	GB	22.0
MP	1078	8331	Calcaneus	GL	63.0
MP	1160	8332	Calcaneus	GB	22.0
MP	1160	8332	Calcaneus	GL	65.0
CSB	9977	6363	Calcaneus	GB	19.0
CSB	9977	6363	Calcaneus	GL	57.0
CSB	11817	6652	Calcaneus	GL	59.0
CSB	11817	6652	Calcaneus	GB	22.0
CSB	9140	6339	Calcaneus	GL	55.0
CSB	9140	6339	Calcaneus	GB	18.5
MP	1660	8112	First phalanx	GLpe	33.9
MP	1660	8112	First phalanx	GL	35.0
MP	1660	8112	First phalanx	Bp	12.0
MP	1660	8112	First phalanx	Bd	11.5
MP	1660	8112	First phalanx	SD	9.52

Table G4.
Osteological Measurements
***Capra hircus* (Domestic Goat)**

Site	UB No	Lot No	Element	Descript	Measure-ment (mm)
PA	4581	4395	Humerus	SD	34.8
PA	4581	4395	Humerus	Bd	30.2
PA	4581	4395	Humerus	BT	30.7

Table G5.
Osteological Measurements
***Ovis aries/Capra hircus* (Domestic Sheep or Goat)**

Site	UB No	Lot No	Element	Descript	Measurement (mm)
PA	3302	4339	Occipital	29	19.7
PA	3302	4439	Occipital	30	15.9
CSB	11132	6398	Mandible	#15a	33.5
CSB	10067	6364	Mandible	#15a	23.9
CSB	10067	6364	Mandible	#3	50.9
CSB	10067	6364	Mandible	#13	63.7
CSB	10067	6364	Mandible	#12	66.4
CSB	10067	6364	Mandible	#7	75.5
CSB	10067	6364	Mandible	#8	52.9
CSB	10067	6364	Mandible	#9	22.1
CSB	10067	6364	Mandible	#5	123.2
CSB	10067	6364	Mandible	#6	149.0
CSB	11159	6398	Mandible	#15a	40.0
CSB	10079	6364	Mandible	#15a	38.4
CSB	11618	6495	Mandible	#15a	38.5
CSB	9193	6344	Mandible	#15a	36.6
CSB	11656	6522	Mandible	#15a	38.0
CSB	10912	6388	Mandible	#15a	41.6
CSB	10912	6388	Mandible	#15b	23.4
CSB	10912	6388	Mandible	#8	59.4
CSB	10912	6388	Mandible	#3	53.1
CSB	10912	6388	Mandible	#13	64.1
CSB	10912	6388	Mandible	#12	72.0
CSB	10934	6389	Mandible	#15a	42.8
CSB	10934	6389	Mandible	#13	68.6
CSB	10934	6389	Mandible	#12	73.7
MP	975	8542	Molar 3	L	23.0
MP	975	8542	Molar 3	B	7.4
MP	1710	8042	Molar 3	L	22.1
MP	1710	8042	Molar 3	B	8.0
MP	318	8369	Molar 3	B	8.6
CSB	11132	6398	Molar 3	L	21.9
CSB	11132	6398	Molar 3	B	8.6
CSB	10067	6364	Molar 3	L	23.9
CSB	10067	6364	Molar 3	B	7.6
CSB	9963	6363	Molar 3	L	22.4
CSB	9963	6363	Molar 3	B	7.3
CSB	11159	6398	Molar 3	L	21.4
CSB	11159	6398	Molar 3	B	7.3
CSB	10079	6364	Molar 3	L	23.4
CSB	10079	6364	Molar 3	B	8.4
CSB	9193	6344	Molar 3	L	19.9
CSB	9193	6344	Molar 3	B	6.1

Table G5 (cont'd).
Osteological Measurements
***Ovis aries/Capra hircus* (Domestic Sheep or Goat)**

Site	UB No	Lot No	Element	Descript	Measure-ment (mm)
CSB	10912	6388	Molar 3	L	28.9
CSB	10912	6388	Molar 3	B	7.0
CSB	724	6047	Innominate	LA	27.9
CSB	724	6047	Innominate	LAR	23.1
CSB	724	6047	Innominate	SH	15.3
CSB	724	6047	Innominate	SB	8.8
CSB	724	6047	Innominate	SC	43.8
MP	894	8376	Innominate	LA	31.2
MP	894	8376	Innominate	LAR	25.5
MP	1228	8335	Innominate	LA	86.4
MP	1785	8333	Innominate	LA	32.5
MP	1785	8333	Innominate	SH	17.0
MP	1785	8333	Innominate	LFo	41.1
MP	1813	8333	Innominate	SH	15.3
MP	1550	8100	Innominate	LFo	33.3
MP	1550	8100	Innominate	LAR	28.8
CSB	9384	6347	Innominate	LA	26.5
CSB	9384	6347	Innominate	LAR	19.6
CSB	10484	6380	Innominate	SH	14.4
CSB	10484	6380	Innominate	SB	9.9
CSB	10484	6380	Innominate	SC	45.8
CSB	10484	6380	Innominate	LA	29.0
CSB	10484	6380	Innominate	LAR	21.0
CSB	10484	6380	Innominate	LFo	30.9
CSB	9538	6353	Innominate	LA	29.4
CSB	9538	6353	Innominate	LAR	22.2
PA	4	4262	Scapula	SLC	22.2
PA	4	4262	Scapula	GLP	34.9
PA	4	4262	Scapula	LG	25.2
PA	4	4262	Scapula	BG	21.5
PA	8	4262	Scapula	SLC	22.2
PA	8	4262	Scapula	GLP	37.6
PA	8	4262	Scapula	LG	30.1
PA	8	4262	Scapula	BG	24.3
PA	189	4552	Scapula	SLC	19.2
PA	189	4552	Scapula	GLP	31.4
PA	189	4552	Scapula	LG	25.7
PA	189	4552	Scapula	BG	21.1
PA	194	4552	Scapula	SLC	21.7
PA	194	4552	Scapula	GLP	33.5
PA	194	4552	Scapula	LG	26.5
PA	194	4552	Scapula	BG	21.8
CSB	350	6192	Scapula	SLC	13.3

Table G5 (cont'd).
Osteological Measurements
***Ovis aries/Capra hircus* (Domestic Sheep or Goat)**

Site	UB No	Lot No	Element	Descript	Measure-ment (mm)
CSB	350	6192	Scapula	GLP	30.3
CSB	350	6192	Scapula	LG	22.9
CSB	350	6192	Scapula	BG	18.9
CSB	421	6196	Scapula	SLC	20.2
CSB	730	6047	Scapula	SLC	16.2
CSB	730	6047	Scapula	BG	19.4
CSB	778	6052	Scapula	GLP	32.2
CSB	778	6052	Scapula	LG	25.9
CSB	778	6052	Scapula	BG	20.9
CSB	2795	6044	Scapula	SLC	19.1
CSB	2795	6044	Scapula	GLP	33.5
CSB	2795	6044	Scapula	LG	26.3
CSB	2795	6044	Scapula	BG	21.7
PA	5821	4532	Scapula	SLC	17.9
PA	5821	4532	Scapula	BG	18.9
PA	6134	4523	Scapula	SLC	18.7
PA	6134	4523	Scapula	GLP	29.7
PA	6134	4523	Scapula	LG	24.8
PA	6134	4523	Scapula	BG	18.4
PA	6444	4530	Scapula	SLC	21.2
PA	6444	4530	Scapula	GLP	32.5
PA	6444	4530	Scapula	LG	24.0
PA	6444	4530	Scapula	BG	19.3
PA	7591	4112	Scapula	SLC	16.3
PA	7593	4112	Scapula	SLC	22.3
PA	7593	4112	Scapula	GLP	34.7
PA	7593	4112	Scapula	LG	26.4
PA	7593	4112	Scapula	BG	22.9
MP	902	8376	Scapula	LG	28.1
MP	902	8376	Scapula	BG	20.0
MP	902	8376	Scapula	SLC	19.7
MP	578	8353	Scapula	SLC	18.7
MP	1011	8334	Scapula	LG	29.3
MP	1011	8334	Scapula	GLP	38.5
MP	1011	8334	Scapula	SLC	24.0
MP	983	8334	Scapula	SLC	17.4
MP	999	8334	Scapula	SLC	14.2
MP	318	8369	Scapula	L	22.2
MP	1756	8087	Scapula	GLP	33.0
MP	1756	8087	Scapula	SLC	20.5
MP	1739	8088	Scapula	SLC	13.7
MP	1576	8387	Scapula	GLP	33.0
MP	1576	8387	Scapula	SLC	18.7

Table G5 (cont'd).
Osteological Measurements
***Ovis aries/Capra hircus* (Domestic Sheep or Goat)**

Site	UB No	Lot No	Element	Descript	Measure-ment (mm)
CSB	10010	6363	Scapula	SLC	20.0
CSB	11811	6652	Scapula	GLP	33.0
CSB	11811	6652	Scapula	SLC	9.2
CSB	11811	6652	Scapula	LG	4.5
CSB	11769	6616	Scapula	SLC	15.3
CSB	2791	6044	Humerus	SD	15.2
CSB	2791	6044	Humerus	Bd	31.7
CSB	2791	6044	Humerus	BT	29.4
MP	26	8404	Humerus	BT	31.1
MP	26	8404	Humerus	Bd	32.0
CSB	9529	6353	Humerus	BT	29.5
CSB	9529	6353	Humerus	Bd	30.0
CSB	740	6047	Radius	BP	34.0
CSB	2850	6044	Radius	Bp	31.2
CSB	2850	6044	Radius	SD	14.8
CSB	2850	6044	Radius	CD	39.7
PA	6304	4319	Radius	BFd	24.9
PA	6479	4520	Radius	Bp	35.3
PA	6479	4520	Radius	BFp	31.8
PA	7513	4520	Radius	Bp	27.5
PA	7513	4520	Radius	BFp	25.1
PA	7733	4101	Radius	Bp	31.5
PA	7733	4101	Radius	BFp	28.7
MP	914	8376	Radius	SD	14.4
CSB	728	6047	Ulna	DPA	28.4
CSB	728	6047	Ulna	SDO	25.3
CSB	728	6047	Ulna	BPC	21.7
CSB	2818	6044	Ulna	DPA	25.4
CSB	2818	6044	Ulna	BPC	20.5
CSB	2867	6058	Ulna	DPA	26.5
CSB	2867	6058	Ulna	BPC	18.8
CSB	4269	6104	Ulna	DPA	28.8
CSB	4269	6104	Ulna	BPC	19.1
PA	6050	4371	Ulna	BPC	18.6
PA	6386	4018	Ulna	BPC	16.9
MP	1547	8100	Ulna	DPA	27.5
MP	1547	8100	Ulna	LO	40.1
MP	1547	8100	Ulna	SDO	28.2
PA	5824	4532	Main metacarpal	Bp	21.0
PA	6350	4018	Main metacarpal	Bp	24.1
PA	6497	4520	Main metacarpal	Bp	24.9
CSB	444	6027	Metacarpal	Bp	22.7
CSB	725	6047	Metacarpal	Bp	24.2

Table G5 (cont'd).
Osteological Measurements
***Ovis aries/Capra hircus* (Domestic Sheep or Goat)**

Site	UB No	Lot No	Element	Descript	Measure-ment (mm)
CSB	733	6047	Metacarpal	Bp	24.4
CSB	733	6047	Metacarpal	SD	14.4
CSB	733	6047	Metacarpal	CD	45.8
CSB	733	6047	Metacarpal	DD	11.0
CSB	2846	6044	Metacarpal	Bp	21.5
CSB	4187	6308	Metacarpal	Bp	24.3
CSB	4220	6104	Metacarpal	Bp	21.5
CSB	4237	6104	Metacarpal	Bp	22.4
CSB	4259	6104	Metacarpal	Bp	22.6
CSB	4290	6067	Metacarpal	Bp	22.4
MP	745	8011	Metacarpal	Bp	23.5
MP	506	8218	Metacarpal	Bp	23.5
MP	843	8394	Metacarpal	Bp	22.5
MP	960	8542	Metacarpal	Bp	26.0
MP	963	8542	Metacarpal	Bp	27.5
MP	635	8008	Metacarpal	Bp	20.5
MP	608	8119	Metacarpal	Bd	56.5
MP	156	8133	Metacarpal	Bp	25.5
MP	13	8404	Metacarpal	Bp	26.0
MP	1186	8335	Metacarpal	Bp	28.0
MP	1661	8112	Metacarpal	Bp	26.5
MP	1731	8088	Metacarpal	Bp	23.5
MP	1716	8088	Metacarpal	Bp	22.0
MP	1661	8112	Metacarpal	Bp	27.0
CSB	9039	6332	Metacarpal	Bp	24.0
CSB	12382	6332	Metacarpal	Bp	38.0
CSB	11413	6426	Metacarpal	Bp	23.0
CSB	11751	6599	Metacarpal	Bp	26.5
CSB	9574	6353	Metacarpal	Bp	22.0
CSB	396	6192	Femur	SD	18.5
CSB	396	6192	Femur	CD	60.5
CSB	2901	6061	Femur	Bd	35.8
PA	3213	4629	Femur	Bd	37.9
PA	6145	4523	Femur	Bd	37.4
PA	6179	4523	Femur	Bd	38.7
PA	6467	4530	Femur	DC	21.0
MP	17	8404	Femur	Bd	34.0
MP	1575	8387	Femur	Bd	38.0
MP	1533	8100	Femur	Bd	37.5
CSB	11528	6446	Femur	Bd	35.5
CSB	9265	6344	Femur	Bd	47.0
CSB	9388	6347	Femur	Bd	46.5
CSB	2866	6058	Tibia	SD	14.5

Table G5 (cont'd).
Osteological Measurements
***Ovis aries/Capra hircus* (Domestic Sheep or Goat)**

Site	UB No	Lot No	Element	Descript	Measure-ment (mm)
CSB	2866	6058	Tibia	CD	45.1
CSB	2866	6058	Tibia	Bd	28.7
CSB	2866	6058	Tibia	SD	14.3
CSB	2886	6058	Tibia	Bd	26.2
PA	3466	4619	Tibia	Bp	41.9
PA	3466	4619	Tibia	Bd	17.4
CSB	4192	6308	Tibia	Bd	27.9
CSB	4221	6104	Tibia	Bd	26.7
CSB	4234	6104	Tibia	Bd	25.9
PA	6040	4371	Tibia	Bd	24.9
PA	6040	4371	Tibia	Bd	24.5
PA	6483	4520	Tibia	Bd	24.4
PA	7729	4101	Tibia	Bp	40.1
PA	7742	4101	Tibia	Bd	23.8
MP	1630	8085	Tibia	Bd	28.0
MP	1630	8085	Tibia	GLpe	34.0
MP	1630	8085	Tibia	GL	35.0
MP	1630	8085	Tibia	Bp	12.0
MP	1630	8085	Tibia	Bd	11.5
MP	1630	8085	Tibia	SD	9.48
MP	1559	8387	Tibia	Bp	43.0
CSB	12019	6753	Tibia	Bd	28.5
PA	6340	4650	Main metatarsal	Bp	20.8
CSB	394	6192	Metatarsal	Bp	19.3
CSB	723	6047	Metatarsal	Bp	19.3
PA	7660	4102	Metatarsal	Bp	19.7
PA	7674	4102	Metatarsal	Bp	21.4
PA	7728	4101	Metatarsal	Bp	21.7
PA	7750	4101	Metatarsal	Bp	19.6
PA	7750	4101	Metatarsal	SD	10.5
PA	7872	4024	Metatarsal	Bp	22.1
MP	28	8404	Metatarsal	Bp	21.0
MP	7	8404	Metatarsal	Bp	20.5
MP	1801	8333	Metatarsal	Bp	22.0
MP	1113	8332	Metatarsal	Bp	23.5
MP	1810	8333	Metatarsal	Bp	24.0
MP	1192	8335	Metatarsal	Bp	20.0
MP	1567	8387	Metatarsal	Bp	21.5
MP	1512	8617	Metatarsal	Bp	20.0
MP	1512	8617	Metatarsal	SD	11.7
CSB	12061	6763	Metatarsal	Bd	27.0
CSB	9058	6332	Metatarsal	Bp	22.0
CSB	9058	6332	Metatarsal	SD	13.1

Table G5 (cont'd).
Osteological Measurements
***Ovis aries/Capra hircus* (Domestic Sheep or Goat)**

Site	UB No	Lot No	Element	Descript	Measurement (mm)
CSB	11844	6667	Metatarsal	Bp	23.0
PA	3049	4181	Fused tarsal 2 + 3	GB	20.6
CSB	2832	6044	Fused tarsal c + 4	GB	24.9
PA	4712	4542	Fused tarsal c + 4	GB	24.7
PA	6183	4523	Fused tarsal c + 4	GB	24.6
SB	4277	6104	Calcaneus	GL	58.7
CSB	4277	6104	Calcaneus	GB	21.5
PA	6057	4371	Calcaneus	GB	18.0
PA	6361	4018	Calcaneus	GL	62.5
PA	6361	4018	Calcaneus	GB	22.4
MP	638	8008	First phalanx	GLpe	56.8
MP	638	8008	First phalanx	GL	59.0
MP	638	8008	First phalanx	Bd	28.5
MP	638	8008	First phalanx	SD	26.0
MP	780	8559	First phalanx	SD	25.9
MP	780	8559	First phalanx	Bd	29.0
CSB	11950	6667	First phalanx	GLpe	35.1
CSB	11950	6667	First phalanx	GL	37.0
CSB	11950	6667	First phalanx	SD	10.2
CSB	11950	6667	First phalanx	Bp	12.5
CSB	11950	6667	First phalanx	Bd	12.0
CSB	11849	6667	First phalanx	GLpe	36.0
CSB	11849	6667	First phalanx	GL	36.0
CSB	11849	6667	First phalanx	SD	10.8
CSB	11849	6667	First phalanx	Bp	13.0
CSB	11849	6667	First phalanx	Bd	12.5
MP	621	8119	Second phalanx	GL	47.0
MP	621	8119	Second phalanx	Bp	34.0
MP	621	8119	Second phalanx	Bd	28.0
MP	621	8119	Second phalanx	SD	27.6
MP	921	8376	Second phalanx	GL	42.5
MP	921	8376	Second phalanx	Bp	29.0
MP	921	8376	Second phalanx	Bd	25.5
MP	921	8376	Second phalanx	SD	23.2
CSB	12094	6763	Second phalanx	GL	22.0
CSB	12094	6763	Second phalanx	Bp	12.5
CSB	12094	6763	Second phalanx	Bd	9.5
CSB	12094	6763	Second phalanx	SD	10.0
CSB	12068	6763	Second phalanx	GL	21.5
CSB	12068	6763	Second phalanx	Bd	10.0
CSB	12068	6763	Second phalanx	Bp	12.0
CSB	12068	6763	Second phalanx	SD	9.2

APPENDIX D

FLORAL ANALYSIS

PLANT REMAINS FROM CROSS STREET-BACKLOT, FEATURE 4

Lawrence Kaplan and Marie Mansfield King
Department of Biology
University of Massachusetts
Boston, MA
7 August 1995

INTRODUCTION

About 5000 species of coniferous and flowering plants grow in the eastern United States. Virtually all produce seeds. A small proportion of these seeds are identifiable by experienced analysts. A small proportion of those which are identifiable are durable, or decay resistant in aerobic soils. Decay resistance is the result of the chemical composition of seed structure. Waxes are abundant in the structure of the some of the more decay resistant seeds, in others, lignification or mineralization is probably more important. Seed decay resistance with respect to those occurring in archaeological soils has been discussed by various authors: Gasser and Adams (1981) have shown the rapidity of decay of Southwestern crop plant seeds, Miller (1989) categorized uncharred seeds from two historic archaeological sites as fragile, not likely to be preserved, and sturdy, likely to be preserved when not carbonized. Kaplan and Maina (1977) proposed that some noncarbonized seeds (eg., those of Chenopodium album) would have very long intact residence in soils because of decay resistance.

Differences in relative resistance to decay, and thereby, persistence in soils is a major factor in determining the composition of the seed sample in the Cross Street-Backlot Feature 4 remains. In Feature 4 the highly anaerobic conditions appear to have been conducive to the preservation of seeds of many types.

The terms "seed" and "fruit" as used throughout this report are those of the layman rather than of structural botany. To illustrate: the plum pit is botanically not a seed. The kernel is the seed, the bony parts of the pit are hardened fruit tissues. The grainy "seeds" on the surface of a strawberry, botnaically, are hardened one-seeded fruits. The juicy or pulpy "fruit" of a strawberry is the expanded tip of the stem bearing the flower.

METHODS AND MATERIALS

One-hundred fifty-one samples (Table 1) of vegetal remains recovered by flotation were examined in the laboratory at the University of Massachusetts in Boston at 6-50 X and identified to the extent possible. Thirty-two additional samples were examined at the Timelines laboratory in Charlestown. Excavation, and recovery of remains by hand sorting, sieving and flotation were carried out by Timelines, Inc. (Appendix 1).

In addition to studying the samples submitted to us we briefly examined plant remains at the Feature 4 site during excavation.

Identifications (Table 2, 3) are based on direct recognition, comparison with reference collections maintained in the laboratory, and published references such as: ARS 1970; Musil 1963; Martin and Barkley 1961. The botanical names, common English names, characteristics and other observations on the origins and uses of selected seed species are presented in Table 2. The seed species appearing in Table 2 were selected to be included because of one or more of the following characteristics: they occur in large numbers; their numbers vary substantially among the phases of the site; or they are documented economic or weedy species.

Although we initiated our analysis with counts of each seed type, it soon became apparent that there would be insufficient time to continue counts and instead we instituted a data collection method of presence/absence (Hastorf and Popper 1988). When the analysis was completed we returned to the samples and made counts of those species which, when quantified, would tell us most about plant use and site formation in Feature 4 (Table 4). In the data tables, counts are recorded numerically, presence/absence by symbols.

The remains consist almost exclusively of nancarbonized seeds, ranging in condition from well-preserved to partially decayed. A few fragments of carbonized wood and a few soil nodules are present.

RESULTS

Thirty-two seed types have been identified to genus or species level with sufficient confidence to be listed and described in Table 2. In some cases we have employed scanning electron microscopy to aid in the identification process. Historical and ecological notes have been added in some instances. Other taxa are present but are often fragmentary, unfamiliar or not comparable with any materials in our reference collections or in the literature.

Among the seed species encountered, the remains of the edible fruits: plum, cherry, and bramble (raspberry/blackberry [because of the cumbersome name, we will refer to the group by the anglicized generic name "rubus"]); and weedy seeds such as the smartweeds and chenopodium are of the greatest significance for understanding site formation processes. Seeds of strawberry, blueberry and huckleberry are surely important as edible fruits but their small size--often less than 1 mm in thickness/width allows them to pass through the 1 mm sieve. (See Appendix 1 for a description of the seed recovery process.) Because of their small size the likelihood of their loss in the sieving process and vertical movement within the site pose uncertainties both for counting and for the presence/absence method of reporting data.

Peach is a special case. Remains of peach (Table 4) were not present in any of the samples submitted to our laboratory, however, the pits were abundant in samples observed at the Timelines Charlestown laboratory. We doubt very much that counts of peach pits would alter our conclusions in any way.

In any analysis of archaeological plant remains differences in the way in which the remains initially enter the site, differences in resistance to physical and chemical destruction, differences in recovery, inadvertant human bias during recovery and analysis all introduce have the potential for introducing error into the results.

Differences in the structure of fruits and seeds are factors to consider in assessing numerical results of recovery. For example, the fruit of plum or cherry each contain a single pit. A strawberry might have one or two hundred seeds; a raspberry may have one or two dozen. Whiule a strawberry fruit and a cherry fruit may be equivalent in size and may be used in the same way, the signicance of one hundred cherry pits is different from that of one hundred strawberry seeds.

DISCUSSION

Seed Remains and Site Formation

An assessment of data relevant to processes of site formation (Timelines laboratory communication titled: "STRATIGRAPHIC SEQUENCE WITHIN FEATURE 4, FROM CONSTRUCTION TO ABANDONMENT") suggests a sequence of earliest through later activities connected with the formation of Feature 4:

I-2/154	first fecal deposit
I-3/151	capping of initial deposit
I-5/148	fecal deposit
I-8/146	fecal deposit
I-10/100	fecal deposit
II-1/125	percolation fill
II-2/99	clay fill
II-3/122	tub matrix
III/97	privy sealed
IV/92	privy sealed

The proposed sequence of activities provides a hypothesis against which we test our botanical data. According to this data, the earliest activity (Phase I-2 Harris Number 154) for which we have specimens represents the beginning of fecal deposition. In this Phase the number of large-fruit pits (Table 4) is modest in contrast with Phases I-5, I-8, and I-10, but even more distinctive is the relatively low number of rubus seeds. Phase I-3 is designated as a capping of Phase I-2, not a period of fecal deposition. The fruit remains here (TAble 4) are less frequent than in either the phase immediately preceding or following. With the resumption of fecal deposition, Phases I-5, I-8, and I-10 show a substantial accumulation of fruit plant remains (Table 4), higher than any we find elsewhere in Feature 4. Subsequent to this period, beginning with Phase II-1 followed by II-2 and II-3, the frequency of fruit remains again drops sharply, although rubus seed is high in the "tub matrix" (Table 4) of II-3. Phases III and IV which were examined in the 1993 (Kaplan 1993a) study of the Cross Street-Backlot site marked the filling and final closure of Feature 4. In these phases plum, cherry, and peach were absent and only a small number of rubus seeds were found.

The presence of weedy plant seeds (Table 4)in a privy which presumably was enclosed by an outbuilding might best be explained by two processes: an occasional shovelful of soil put into the privy in order to reduce an unpleasant odor, or possibly, a perceived danger to health from the "bad air" emitted; or an intentional capping of the pit. We would expect that the occasional shovelful of soil added for management of privy conditions would be accompanied in the excavated layers by significant amounts of food plant remains, in particular by food plant remains which typically would have passed through the human gut as components of fecal deposition.

Seeds of rubus, blueberry/huckleberry, strawberry and perhaps grape would be the type of food plant seed that we would expect to find well represented in such an association. Larger fruit pits, plum, cherry, peach, which might be eaten out of hand fresh or dried should also appear in such contexts, although they would be more likely to be discarded rather than ingested and passed through the digestive tract. We believe, however, that the preponderance of the larger fruit pits entered the privy as waste from the preparation of pies or the fruit steeped alcoholic drinks (cherry bounce) which were popular in early American homes[1]. Unless these stone fruits were imported as dried products, that is, if they are the remains of fresh fruits, they are probably from the earliest crop years of these fruits in eastern North America.

Kaplan (1993a) found significant differences in the distribution of fruit remains between Features 1 and 20 of the Cross Street-Backlot site. Both of those features had strong representation of fruits. Rubus which was widespread and abundant in Feature 4 was strongly represented in both Features 1 and 20. Cherry was well represented in Feature 1, and not at all in Feature 20. Peach was well represented in Feature 1, but only two peach pits were found in Feature 20. Grape pits were well represented in both Features 1 and 20.

Of the five edible fruits, rubus and grape contrast with the others. They, being small and abundant are likely to be ingested and to pass through the digestive tract and be deposited with human waste. Cherry, plum and peach are far less likely to be ingested and deposited with the feces. From the evidence of the fruit pits, therefore, it appears that Feature 1, like Feature 4 Phases I-5, I-8, and I-10, was used more for both discarding food residues and human waste and that Feat 20 was more devoted to a single purpose, that is for human waste and not for discarding food residues.

Blueberry/huckleberry and strawberry seeds were absent from the floated sieved samples from Features 1 and 20 (Kaplan 1993a)

---

[1]Euell Gibbons (Stalking the Wild Asparagus, David McKay, Inc, N.Y. p.63) provides a concise recipe for cherry bounce made from wild black, or rum cherry (Prunus serotina) fruits steeped with sugar in whiskey, brandy, or, surely, rum.

in contrast with their presence in Feature 4. This difference could be the result of dissimilar flotation procedures used by the two laboratories involved in the recovery of plant remains (Appendix 1)

In our study of Feature 4 we were especially cognizant of evidence for the presence of weedy plants. Weeds are by definition, pioneering plants with high reproductive potential, i.e., many seeds are produced by each plant. Most of the principal weedy seed plants in eastern North America are annuals of exotic, Eurasian, origin (see notes, Table 2).

In Feat. 4 we found weed seeds in every phase (Table 4) although their abundance varied. In addition to identifiable weed seeds there were many remains of seeds, no doubt all from weedy plants, which could often be identified to the family level but not more specifically (Table 3).

The most frequently occurring weeds in Feature 4 are of the genus, *Polygonum,* the smartweeds, the genus, *Rumex,* the docks and *Chenopodium album*, goosefoot (Tables 3, 4). Some of the most common weedy polygonums are North American natives which thrive in disturbed but moist habitats, others spread into drier exposed locations. The common *Rumex* species, the docks and sorrels, are mostly Eurasian. In the case of *Chenopodium*, the Feat. 4 species is the Eurasian *C. album* (goosefoot) (identification confirmed by scanning elecron microscopy). *Rumex* is a cosmopolitan genus, but two of the principal weedy species, curly dock, and sheep sorrel are Eurasian. Seeds of these polygonum and rumex species and goosefoot are well known in Boston area archaeological soils such as those from Spectacle Island (Kaplan 1993b) and Mill Pond (Kaplan 1994).

Prominent among the seeds of adventive, or weedy, species in fire subclimax coastal soils (eg. the Spectacle Island soils) is sumac (*Rhus*) which is a dominant shrubby tree on the Boston Harbor islands and shoreline areas where soil disturbance and fires occur frequently. Staghorn sumac, smooth sumac, and dwarf or shining sumac are native species with broad ranges that include New England coastal regions. Sumac seeds were not found in the Cross Street-Backlot, nor the Mill Pond site.

In addition to differences in the array of seed species, the condition of seeds from Feat. 4 also contrasts with what had been found on Spectacle Island. Many of the weed seeds recovered from Spectacle Island were carbonized, none from Feat. 4 was carbonized. Indeed many polygonum seeds from Feat. 4 had bits of floral tissue present.

The occurrence of olive pits in Phases I-2 and I-5 (Table 3) is interesting more from the point of view of gastronomic history and maritime trade than from the point of view of site formation. No item of diet could be more of a luxury than olives, and none is more indisputably an import--an import ultimately originating in the Mediterranean. Olives were not grown in New Spain inasmuch as the mother country prohibited its cultivation there (the grape too was prohibited) (Lucille N. Kaplan, personal communication) in order to avoid competition with its colony.

CONCLUSION

We find a strong correlation between variations in the frequency of seed remains and activities involved in the formation of Feature 4. Those phases associated with fecal deposition are phases in which the remains of rubus are especially abundant. In the same phases, the remains of fruit pits which we believe to be food preparation (kitchen) wastes are abundant. These two types of remains: small seeds which would have passed through the digestive tract, and larger fruit pits which would have been discarded during food preparation, are less frequent or absent from those phases which are reported by the Timelines laboratory to be events of capping or filling a prior layer of fecal deposition. In each phase that the privy was used for fecal deposition it appears also to have been used for kitchen wastes. In Phase I-3, in which the previous layer was capped a small number of fruit pits and berry seeds are present. Their presence may be explained by some degree of vertical movement, up or down, within the site. This is especially likely for plum, cherry and peach. Similar explanations may apply to Phases II-1, II-2, III, and IV. Rubus seeds may be present in soils with little evidence of human activity.

The functions of Features 1 and 20 may be better understood by the comparison of their food plant seed remains with those of Feature 4 phases.

The presence of weedy seed species of Eurasian origin attest to the early establishment of these plants in the Colonial period. The weed seed component of Feature 4 in comparison with Spectacle Island further reveals differences between soils developed beneath a residential-commercial community such as Cross Street/Backlot and a fire subclimax locality such as that of the harbor island.

Olive pits, coriander, English walnut, and what are probably the seeds of imported dried raisins, present in Feature 4 suggest a richness of gastronomic life in the colony, and the abundant domestic fruit pits suggest an early and successful establishment of Old World arboriculture.

Literature Cited

ARS (Agricultural Research Service). 1970. Selected Weeds of the United States, Agricultural Handbook No. 366, U. S. Department of Agriculture, Washington, DC.

Fernald, M. L. 1950. Gray's Manual of Botany, 8th ed. [corrected printing 1970]. D. Van Nostrand Company, New York.

Forest Service, U.S. Department of Agriculture. 1974. Seeds of Woody Plants in the United States. USDA, Agriculture Handbook 450, Washington, DC.

Gasser, Robert E. and E. Charles Adams. 1981. Aspects of deterioration of plant remains in archeological sites: the Walpi project. Journal of Ethnobiology 1(1)182-192.

Grime, J. P., J. G. Hodgson, and R. Hunt. 1988. Comparative Plant Ecology, Unwin Hyman, London.

Hedrick, U.P. (editor) Sturtevant's notes on edible Plants. State of New York, Department of Ag. 27th Annual Rept. Vol. 2(2) NY. Ag. Exp. Sta. Rept. 1919. Albany.

Hastorf, Christine A. and Virginia S. Popper. 1988. Current Palaeoethnobotany. University of Chicago Press. Chicago.

Kaplan, L. 1993a. Plant remains from Paddy's Alley. Report submitted to Timelines, Inc. Groton, MA.

Kaplan, L. 1993b. Plant remains from Spectacle Island. Report submitted to Timelines, Inc. Groton, MA.

Kaplan, L. 1994. Floral remains from Mill Pond Site, Boston. Report submitted to Timelines, Inc. Groton, MA.

Kaplan, L. and S. Maina. 1977. Archaeological Botany of the Apple Creek Site, Illinois. Journal of Seed Technology 2(2) 40-53.

Mabberley, D. J. 1981. The plant book. Cambridge University Press, Cambridge.

Martin, A. C. and W. D. Barkley. 1961. Seed Identification Manual, University of California Press, Berkeley, CA.

Miller, Naomi F. 1989. What Mean These Seeds: A Comparative Approach to Archaeological Seeds: A Comparative Approach to Archaeological Seed Analysis. Historical Archaeology 23(2): 50-59.

Musil, A. F. 1963. Identification of Crop and Weed Seeds, Agricultural Handbook No. 219, U. S. Department of Agriculture, Washington, DC.

Sauer, J. D. Historical geography of crop plants, a selected roster. CRC Press, Boca Raton,FL

TABLE 1. FEATURE 4. CROSS STREET/BACKLOT. Flotation samples received and analyzed for plant remains.

NUMBER OF SAMPLES (SEPARATE VIALS AND BAGS)

FLOTATION UNIT	Harris Number	LIGHT FRACTION		HEAVY FRACTION	
		VIALS	BAGS	VIALS	BAGS
6342	HN 122	1	1	0	0
6343	HN 122	1	2	0	3
6461	HN 100	2	1	2	2
6462	HN 100	2	1	2	2
6400	HN 100	4	0	2	2
6399	HN 100	2	1	3	2
6360	HN 125	2	0	2	2
6497	HN 146	2	2	2	2
6502	HN 146	2	2	2	2
6565	HN 146	2	1	2	4
6568	HN 146	1	1	2	2
6621	HN 148	2	1	2	2
6627	HN 146	2	1	2	2
6637	HN 146	2	1	2	2
6684	HN 148	2	1	2	2
6703	HN 148	2	1	2	2
6707	HN 148	2	1	2	3
6727	HN 148	2	1	2	2
6731	HN 151	2	1	2	2
6754	HN 154	2		2	2
6829	HN 154	2		2	1
6830	HN 154	2		2	2
6868	HN 99	2		2	0
		45	20	43	43

TOTAL FLOTATION SAMPLES
SUBMITTED AND ANALYZED = 151

ADDITIONAL SAMPLES HAND SEPARATED BY EXCAVATORS, OBSERVED AT TIMELINES LABORATORY = 32

TABLE 2. SELECTED SEED SPECIES RECOVERED FROM FEATURE 4. BRIEF DESCRIPTIONS AND NOTES

TAXA

FRUITS--SEEDS LARGER THAN 1 MM

Plum

Prunus domestica, pit light yellow, elliptic, (13.4 x 8.4 mm). Although native plums of the genus *Prunus* were present and widely used by native Americans and early settlers, the fruit pits identified in Feature 4 of the Paddy's Alley site are not the native species (including *P. maritima*, the beach plum) (reference collections and Forest Service, USDA [1974]). *Prunus domestica*, the common plum of Europe which originated in Southwest Asia has a complex background of hybridization and changes in chromosome number (Mabberley 1987). In the United States other crosses have taken place with native plums and those from China (Mabberley 1987) but those in the Paddy's Alley site are probably early enough to still be genetically identical with the European types. The damson plum, and some other varieties is another group of cultivated European-Mediterranean plums which some place in the same species as the common plum (Mabberley) and which may have been introduced into early New England. Hedrick (1919: 460) notes that "Plum stones were among the seeds mentioned in the Memorandum of Mar. 16, 1629, to be sent to the Massachusetts Company."

Cherry

Probably the domesticated Old World cherries, *Prunus cerasus*, sour cherry or *P. avium*, sweet cherry. Pits are oval, light yellow, smooth stone, (5.0 x 4.2 mm). Hedrick (1919: 459) notes that *P. cerasus*, "The Red Kentish, referred to this class [brought to England from Flanders by the Gardener of Henry VIII], was the cherry grown by the Massachusetts colonists. p. 458, P. avium, "Cherry stones were among the seeds mentioned in 1629 to be sent to the Massachusetts Company. Native cherries, Prunus virginiana, choke cherry, P. serotina, wild black cherry, P. pennsylvanica, pin or fire cherry are present in the native vegetation of the North East but have pits which are smaller than those of the introduced sweet cherry, or the sour cherry. Pits of the sweet cherry and sour cherry are not distinguishable in morphological comparison.

Peach

Prunus persica, dark brown, intact, deep sculpturing. Peach pits are easily distinguished from pits of other native or introduced fruits and of the cultivated prunus species discussed here, and are the most successful in becoming naturalized. According to Hedrick (1919: 462-464. "Peach stones were among the seeds ordered by the Governor and Company for the Massachusetts Bay Colony in New England in 1629. About 1683, Stacy, writing from New Jersey, said 'we have peaches by cartloads.'"

Cucurbit Squash/pumpkin, probably *Cucurbita pepo*, seeds are elliptical, flat, light yellow, smooth surface, vary in size. The only cultivated plant detected among the Feature 4 remains which was adopted from local Indian agriculture. No doubt, maize and beans were present and utilized, but the remains of these plants are not detectable by the methods used in the study of this site.

Grape

Vitis spp. It is likely that both a native grape [*Vitis riparia*, or *V. aestivalis*, no tapered "neck," deep. groves, (5.9 x 4.2 mm)], and the Eurasian grape, [*V. vinifera*, long neck, (5.8 x 4.2 mm)], are present. Grape is another well known fruit of having edible species through much of the temperate world. The "true vine" the wine grape, *Vitis vinifera* is of Caspian Sea--Southwest Asian origin. It is the only grape cultivated in the biblical and classical Mediterranean world. Despite many trials it has not consistently been successful in eastern North America except as a hybrid with the American fox grape, *V. labrusca*. As a fruit source, the fox grape is the most important of the American species and has been used as a hybrid with vinifera for sweet wines. The American grapes do not form sufficient sugar for fermenting or for drying to produce raisins. Some seeds of grape in the Paddy's Alley, Feature 4 remains in their form and size closely resemble those of *V. vinifera* rather than those of a native species (Hedrick 1919). If they are vinifera seeds, they are probably from imported raisins.

Olive *Olea europea*, oblong, surface sculpture stone, (4.3 x 6.3 mm).

Pear/apple

Pyrus, dark brown, flat, intact, non-carb., elliptic (5.0 x 10.1 mm), the cultivated pears and apples were introduced early in colonial history and were much used for hard ciders as well as for fruit pies and other preparations. Found in all Phases except for the upper levels III-97, IV-92 excavated in 1993. Remains found are probably mostly kitchen waste rather than ciders which would have been pressed in some other location.

Hawthorn *Crataegus*, intact, rounded, ridges, longitudinal groves, tan, (5.0 x 5.9 mm), native sometimes used for conserves

Rubus, Raspberry/ blackberry/bramble
Rubus, light yellow, sculpturing, oval, nutlets, compressed, (2.2 x 1.7 mm)sp.), or brambles, are shrubs widely distributed in the Northern Hemisphere often of forest margins and other open habitats, they have long been a source of gathered fruit in the Old World and the New. In England and North America they have been so readily available as a gathered fruit that they were not selected for cultivation until the early decades of the nineteenth century (Sauer 1993; Hedrick 1919). Fernald (1950) lists 205 species in the genus, which are distinguished reliably only by technical characters of the canes, leaves, and flowers, not by seeds.

Elderberry
Sambucus canadensis, (2.5 x 5.0 mm)

FRUITS--SEEDS 1 MM AND SMALLER

Blueberry *Vaccinium* grey, flat, sculpturing, (.86 x 1.1 mm)

Huckleberry
Gaylussacia, light yellow, indented, rough surface, (2.2 x 1.7 mm)

Strawberry
Fragaria, intact, light yellow, sculpturing, ovate, compressed, (1.3 x .86 mm)

SPICES

Coriander *Coriandrum sativum*, oval, pointed end, (2.6 x 2.6 mm), occurs frequently, this is a common and much used spice of Old World origin. Often used in pickling.

Caraway (?)
Carum carvi, striation's, brown, pointed, (3.8 x 2.1 mm)

Pepper (?) or other nightshade
Capsicum (?), lgt. yellow, flat, intact, (2.9 x 3.8 mm)

NUT

English walnut
Juglans regia shell found only in Phase I-5, must have been imported, does not grow successfully in New England.

Hickory

Carya cordiformis, drk.brown, frag's, smooth.

Chestnut *Castanea dentata*, dk. brown, smooth seed surface, intact, rounded, not found in Feat. 4

WEEDS OR ADVENTIVE PLANTS

Smartweed/dock

Polygonum pensylvanicum, black, shiny, (3.9 x 3.4 mm). *Polygonum*, intact, black, non-carb., (2.15 x 1.7 mm), and *Rumex*, intact, non-carb., (1.3 x .86 mm). Knotweed, *Polygonum aviculare*, (2.0 x 1.3 mm). *Rumex acetosella* of the family Polygonaceae, is a low growing herbaceous weed of open (unshaded), infertile and acid soils. Naturalized from Europe (Fernald 1950), although its pollen is often reported from precontact cores. Grime, et al. (1988: 488) describe the species as one of ..."dry, well-drained habitats..." and refer to it as a plant that forms a "persistent bank of buried seed." It spreads vegetatively and is well-known as a patch-forming weed. A single inflorescence usually forms >100 flowers.

Lambsquarters

Chenopodium album, round, flat, intact, shiny, black surface, non-carb, (1.1 x 1.1 mm) Lambsquarters or goosefoot is a weed found in mesic habitats wherever the ground is disturbed throughout the United States. It is a Eurasian native introduced from Europe (ARS 1970: 132). Very likely it was repeatedly introduced into the United States as a seed adventive in ballast during the early days of trans-Atlantic sailing ship commerce. It may be the best known, most universally recognized weed in the United States. The seeds are of two morphs, shiny brown or shiny black. The number of brown or black produced varies from year to year within a single population. The brown seed is capable of immediate germination, the black seed is dormant (Grime, J. P., J. G. Hodgson, and R. Hunt 1988: 188). None of the *C. album* seeds from the Millpond, or Feature 4 sites is brown.

Pokeweed *Phytolacca americana*, round, shiny, black surface, intact, flat, non-carb., (1.6 x 1.6 mm)

Ground Cherry (?)

Physalis (?), elliptical, surface pitted, flat, grey, (3.2 x 3.7 mm), a second, similar, type: flat, grey, pitted, elliptic, (1.3 x 1.3 mm), (2.2 x 1.7 mm)

Foxtail grass

Setaria, cross hatch's, rounded, lgt. yellow, intact

Mustard

Brassicia (nigra?), black, sculpturing, indented, rounded, intact

Wild Carrot

Daucus, elliptical, surface hairs, white/black

Catchfly(?)

Silene (*noctiflora*?), flat, rounded, (2.5 x 2.5 mm)

Buttercup

Ranunculus, round, rough surface, light brown.

Black nightshade

Solanum nigrum, round, black, pitted surface, (.86 x .86 mm)

OTHER

Buckthorn(?)

Rhamnus, drk. shiny brown, intact, (5.5 x 5.0 mm)

Sedge *Carex aquatilis*, rnd., pore, drk. br., smooth, (2.6 x 2.6 mm)

Rush *Juncus*

TABLE 3.Feature 4. Cross Street-Backlot. Presence/Absence distribution of seed remains. Listed by type number, the order in which the plant remains were identified in the laboratory. Where a seed type appears more than once, the second entry is a variant of the first.

	HN# / PHASE	154 I-2	151 I-3	148 I-5	146 I-8	100 I-10	125 II-1	99 II-2	122 II-3
PLANT TAXA	TYPE#	PRESENCE = 1, ABSENCE = 0							
PLUM	1	1	1	1	1	1	1	1	1
CHERRY	2	1	1	1	1	1	1	1	1
CUCURBIT	3	1	1	1	1	1	1	1	1
GRAPE [VINIFERA]	4	1	1	1	1	1	1	1	1
PEACH	12	1	+	1	1	1	1	1	1
SMARTWEED	27	0	0	0	0	0	0	1	0
UNIDENT	33	1	0	1	0	0	0	0	0
HICKORY	34	0	0	1	0	0	0	0	0
POKEWEED	38	0	0	1	0	0	0	0	1
ELDERBERRY	41	0	0	0	0	0	0	0	0
UNIDENT	44	0	0	1	0	0	0	0	0
LAMBSQUARTERS	46	1	1	1	1	1	1	1	1
POLYGONUM	47	1	0	1	1	1	1	0	1
UNIDENT	48	0	0	0	0	0	0	0	0
HAWTHORNE	49	0	1	1	1	1	0	0	0
SOLANACEAE [GROUND CHRRY?]	51	0	0	0	0	0	0	0	1
UNIDENT	52	0	0	1	1	1	1	0	0
UNIDENT	53	0	0	1	0	0	1	0	0
HAWTHORNE	56	0	0	0	0	0	0	0	1
RUBUS, BRAMBLE, RASP-BLACKBERRY	57	1	1	1	1	1	1	1	1
BLUEBERRY	58	1	1	1	1	1	1	0	1
SMARTWEED	59	1	0	1	0	0	0	0	1
STRAWBERRY	60	1	1	1	1	1	1	0	1
SILENE(?)	62		1	1	1	1	1	0	1
POPPY (CONTROL)	64	1	0	1	0	1	0	1	1
SMARTWEED	65	0	0	0	0	0	0	0	1

	HN# PHASE	154 I-2	151 I-3	148 I-5	146 I-8	100 I-10	125 II-1	99 II-2	122 II-3
PLANT TAXA	TYPE #								
DOCK	66	0	0	1	0	0	0	0	1
KNOTWEED	67	0	0	0	0	1	0	0	1
UNIDENT	68	0	0	0	0	0	0	0	1
UNIDENT	69	0	0	0	0	0	0	0	1
VETCH (?)	70	0	0	0	0	0	0	0	1
WOOD CHARCOAL	71	0	0	0	0	0	0	0	1
SOIL NODULES	72	0	0	0	0	0	0	0	1
SOLANACEAE [PHYSALIS]	73	0	0	0	1	0	0	0	0
UNIDENT	74	0	1	1	1	1	1	0	0
UNIDENT	75	0	0	0	0	0	0	0	1
SEDGE/RUSH	76	0	0	1	1	1	0	0	1
ROSACEAE	77	1	0	1	1	1	0	0	0
THISTLE [CARDUUS]	78	0	0	0	1	1	0	0	0
PEAR/APPLE	79	0	0	0	0	1	0	0	0
PEAR/APPLE	80	1	1	1	1	1	0	0	0
UNIDENT	81	0	0	0	0	1	0	0	0
UNIDENT	82	1	1	1	1	1	1	1	0
[ELDERBERRY]	83	0	1	1	1	1	0	0	0
UMBELLIFERAE [CARRAWAY]	84	1	0	1	1	1	0	0	0
UNIDENT	85	0	0	1	1	1	0	0	0
UNIDENT	86	0	0	1	1	1	0	0	0
MUSTARD	87	1	1	1	1	1	0	0	0
PEAR/APPLE	88	1	0	0	1	1	0	0	0
FOXTAIL GRASS	89	1	1	1	1	1	0	0	0
HUCKLEBERRY	90	0	0	1	1	1	0	0	0
UNIDENT	91	0	0	1	1	1	1	0	0
UNIDENT	92	0	0	0	0	1	0	0	0
UNIDENT	93	1	1	1	1	1	0	0	0
HAWTHORNE	94	0	0	0	1	0	0	0	0
WILD LETTUCE (?)	95	0	0	1	1	0	0	0	0

	HN# PHASE	154 I-2	151 I-3	148 I-5	146 I-8	100 I-10	125 II-1	99 II-2	122 II-3
PLANT TAXA	TYPE#								
WILD CARROT (?)	96	0	0	1	1	0	0	0	0
SOLANACEAE [CAPSICUM]	98	0	0	1	1	0	0	0	0
UNIDENT	99	0	0	1	1	0	0	0	0
UNIDENT	100	0	0	1	0	0	0	0	0
GRAPE	101	0	1	1	0	0	0	0	0
UMBELLIFERAE [CORIANDER]	102	0	0	1	0	0	0	0	0
BUCKTHORN (?)	103	0	0	1	1	0	0	0	0
WALNUT, ENGLISH	104	0	0	1	0	0	0	0	0
UNIDENT	105	0	0	1	0	0	0	0	0
UNIDENT	106	0	0	1	0	0	0	0	0
UNIDENT	108	0	0	1	0	0	0	0	0
OLIVE [OLEA EUROPEA]	109	1	0	1	0	0	0	0	0
PEAR/APPLE	110	0	1	1	0	0	0	0	0
BUTTERCUP	111	1	0	0	0	0	0	0	0

TABLE 4. FEATURE 4. VEGETAL REMAINS, SELECTED TAXA.

TAXON/TYPE#	PHASE/HARRIS #								
	I-2/154	I-3/151	I-5/148	I-8/146	I-10/100	II-1/125	II-2/99	II-3/122	III/97[1] IV/92[1]
FRUITS–SEEDS 1 mm OR LARGER									
PRUNUS(PLUM)	180	7	300	250	1500	24	0	86	0
PRUNUS(CHERRY)	200+	14	1000+	300+	1600	7	0	84	0
PRUNUS(PEACH)	○[2]	○	○	○	○	○	○	0[4]	0
PYRUS	●[3]	●	●	●	●	●	0	0	0
VITIS VINIFERA	●	●	●	●	●	●	●	●	0
V. sp)	●	●	0	0	●	0	0	0	4
RUBUS	30	13	500+	330+	1000+	40	2	117	14
FRUITS–SEEDS 1 mm OR SMALLER									
VACCINIUM	●	●	●	●	0	●	●	●	0
GAYLUSSACIA	●	0	●	●	●	0	0	0	0
FRAGARIA	●	●	●	●	?	●	0	●	0
WEEDS									
P. PERSICARIA	●	●	●	●	●	●	0	0	0
POLYGONUM (AVICULARE?)	0	0	0	0	●	0	0	●	0
POLYGONUM (PENNSYLVANICUM?)	●	0	●	0	0	0	0	●	0
-RUMEX	0	0	●	0	0	0	0	0	0
CHENOPODIUM	●	●	●	●	●	●	●	●	0
BRASSICA (NIGRA?)	0	●	●	●	●	0	0	0	0
SOLANUM NIGRUM	0	●	●	●	●	●	0	0	0
SETARIA	●	●	●	●	●	0	0	0	0
SPICES									
CARUM CARVI?	●	0	●	●	●	0	0	0	0
CORIANDRUM SATIVUM	0	●	●	●	●	0	0	0	0
CAPSICUM?	0	0	●	●	0	0	0	0	0

[1] 1993 Excavation

○[2] Hand sorted at excavation, observed at Timelines lab

●[3] Present

0[4] Absent

APPENDIX 1 Floral Recovery for the Feature 4 Privy, Cross Street Backlot. Communicated by Timelines Inc.

Floral remains were recovered from all contexts from the Cross Street Backlot Feature 4 privy through 2 methods of recovery: 1) wet screening through use of a strainer and manual separation, and 2) flotation of three-liter samples of sediment recovered from the privy in-situ. The first method resulted in the recovery of large quantities of seeds and wood fragments. The seeds were bagged separately from the wood and represent primarily large fruit pits such as cherry and plum, and small quantities of smaller seeds and some nutshells. The second method, through flotation, resulted in the recovery of floral remains of all sizes. Large quantities of large and small seeds and some nutshells. The second method, through flotation, resulted in the recovery of floral remains of all sizes. Large quantities of large and small seeds were recovered and sorted out from the light and heavy fractions for identification. Discussion of the recovery methods and the samples will follow in more detail.

Field Recovery of Floral Remains

Wood, seeds, and other organic materials were recovered in the field through wet screening techniques. The prevalence of seeds, wood, and other materials made a thorough recovery of them difficult. Samples of wood pieces were recovered by manual selection with specimens retained being several centimeters or more in size or having evidence of modification or working. They were soaked in a solution of polyethylene glycol for several months, and then air dried. A separation of worked wood was conducted to further conserve those specimens considered to merit the process. Wood was quantified and catalogued as worked or unworked, with selected examples being measured and drawn. No floral analysis of the wood has been considered during the course of the project.

The recovery of seeds and nutshells was accomplished through manual selection during wet screening. Occasionally, a hand strainer was used to recover seeds floating in the wet screening tub. A large percentage of seeds did not float, however, so this method was only a partial solution. The manual selection of seeds resulted in the larger fruit pits being recovered with cherry and plum contributing over 95% of the total seed volume. In all, 53 bags from ten separate harris contexts were recovered. A large ziplock bag of seeds was counted and weighed to enable us to estimate the quantity of seeds in the other 52 bags. A total of 4,500 seeds and about 20 nutshells were counted. Based on volume, estimates for the other bags were made. Total estimates for each Harris number and phase are shown in the following chart.

Phase	Harris	Estimated Seed Quantity
1-2	154	18,000+
1-3	153	3,000+
1-3	151	Small Sample
1-5	148	41,000+
1-7	149	8,500+
1-8	146	45,000+
1-10	100	33,000+
11-1	125	13,000+
11-2	99	Small Sample
11-3	122	4,500+
Total		166,000+

The seed samples represent a sample biased toward large fruit pits. Given the shear quantity of seeds, their inconsistent manner of recovery, and their limited variety of species, they have not been analyzed as floral samples. They have been scanned for peach pits and olive pits, with less than 30 of the former and only a few of the latter being recovered.

Flotation Recovery of Floral Remains

A total of 23 three-liter sediment samples were collected from nine harris contexts. The sediment was recovered from the privy in-situ, without any floral material being removed from the sample. Formerly flotation samples were processed at the Public Archaeology Lab in Pawtucket, R.I., using a 1mm mesh heavy fraction screen and a 0.33mm mesh light fraction screen.

For the Feature 4 excavation, the Timelines laboratory set up a borrowed flotation tank to separate out the light and heavy fractions of the samples. The sediment was water screened through a 1 cm plastic mesh milk crate into the 0.25mm brass wire mesh heavy fraction screen. This allowed for the removal of large materials and the breakup of large sediment chunks. The tank was filled and water flowed upward through tubes in the bottom of the flotation tank to create an upward turbulence, lifting light organic material, which was collected in an overflow bucket equipped with 0.25mm brass wire mesh to catch the light fraction. Manual turbulence and the use of baking soda for clayey sediments aided the separation of light organics from the heavy fraction screen. Each sample had 100 uncharred poppy seeds added to it from estimated recovery rate.

The recovery of organics in the light fraction and heavy organics and inorganics in the heavy fraction was so dense that a further step was added to the process: that of separation by graduated screens for both the heavy and light fractions. The samples were water sieved through 2mm. 1mm. and 0.5mm screens. The samples were then air-dried and the 2mm and 1mm samples were sorted under a high powered microscope to recover seeds, micro-fauna, insect parts, and artifacts or other materials of obvious analytical interest. The remaining material has been retained for future research. The seeds from the 2mm and 1mm heavy and light fraction screens were sent to Dr. Lawrence Kaplan for identification and analysis. Additionally, the unsorted 0.5mm samples were sent for scanning, as were four of the field recovered bags of seeds. Other floral material present in the samples was not sent for analysis. Due to the dense recovery or organic material in the screens, the 0.5mm screen size was not considered for sorting from 22 of the flotation samples due to the tremendous amount of time needed to do so. The 0.5mm screens from the first sample were sorted. The total poppy seed recovery for that sample was 32. with 4 seeds in the 1mm screens and 28 seeds in the 0.5mm screens. The other 22 flotation samples had a range of 0 to 29 poppy seeds recovered in the 1mm screens, with an average of 7.8 poppy seeds per flotation sample. Most of the poppy seeds remain unsorted in the 0.5mm samples.

The recovery of seeds in the flotation samples allows for a qualitative and quantitative measure for the Feature as a whole, since the quantity of seeds of various floral species can be estimated from those recovered from the three-liter samples. More importantly, the presence and relative frequency by harris number can give significant insight to the history of the privy use and household economy.

Table A1.
Central Artery Project
Assemblages Analyzed

Assemblage	Description	Lot(s)	Harris Numbers	Computer Designationn
CSB Feature 4 Phase II	Ca. 1716 Use of Feature 4	6344, 6347, 6361, 6362, 6363, 6364, 6365, 6366, 6379, 6381, 6387, 6388, 6389, 6396, 6398, 6410	99, 122, 125	72AL-G
CSB Feature 4 Phase II-1	Ca. 1716 Possible percolation fill	6361, 6362, 6363, 6364, 6365, 6366, 6396, 6398, 6410	125	72AL-201
CSB Feature 4 Phase II-2	Ca. 1716 Clay fill around barrel and trough	6379, 6381, 6387, 6388, 6389	99	72AL-202
CSB Feature 4 Phase II-3	Ca. 1716 Deposition matrix within tub	6344, 6347	122	72AL-203
CSB Phase III	Ca. 1720s-1740s Privy closure and abandonment	6067, 6104, 6108, 6130, 6133, 6141, 6144, 6149, 6155, 6158	98	72AL-C
CSB Phase IV	Ca. 1780-1810 Late 18th- through early 19th-c. occupation	6031	83	72AL-D
CSB Phase V	Ca. 1750-1800 Occupation	6027, 6040, 6044, 6047, 6052, 6058, 6061	93	72AL-E
MP Phase I	Late 17th to early 18th c. Domestic	8051, 8058, 8062, 8075, 8081, 8085, 8088, 8100, 8112, 8149, 8387, 8548, 8554, 8617		72AX-A
MP Phase III	Late 18th c. Bulkhead	8105, 8133, 8139, 8285, 8404		72AX-B
MP Phase IIIa	Late 18th c. Dock	8310, 8330, 8331, 8332, 8333, 8334, 8335, 8340, 8341, 8368, 8369		72AX-C
MP Phase IV	Early 19th c. Landfill	8260, 8274, 8307, 8314, 8357, 8551, 8633, 8634		72AX-D

Table A1.
Central Artery Project
Assemblages Analyzed

Assemblage	Description	Lot(s)	Harris Numbers	Computer Designationn
MP Phase V	Late 18th c. Domestic	8004, 8008, 8011, 8013, 8042, 8119, 8125, 8206, 8209, 8218, 8255, 8346, 8348, 8353, 8376, 8390, 8394, 8412, 8415, 8444, 8511, 8514, 8542, 8559, 8563, 8565, 8567		72AX-E

Note: PA = Paddy's Alley; CSB = Cross Street Back Lot; MP = Mill Pond. Designation "72AK-A" means site 72, area AK, phase A; "72AK-001" means site 72, area AK, master context 001. These designations are used in computer analysis to facilitate standardization, and are not marked on the bones themselves in any way.

APPENDIX B.

TAXA IDENTIFIED

Table B1.
Taxa Identified from Paddy's Alley Phase I

Latin Name	Common Name	Sub-Phases
Class Osteichthyes	Bony Fish	West/East
Family Gadidae	Codfish	East
Class Aves	Bird	West/East
Anser anser	Domestic Goose	West
Branta canadensis	Canada Goose	West
Bucephala albeola	Bufflehead	West
Meleagris gallopavo	Turkey	West
Gallus gallus	Chicken	West/East
Ectopistes migratorius	Passenger Pigeon	West/East
Class Mammalia	Mammal	West/East
Class Mammalia I	Large Mammal	West/East
Class Mammalia II	Medium Mammal	West/East
Class Mammalia III	Small Mammal	West
Felis domesticus	Domestic Cat	East
Order Artiodactyla I	Sheep, Goat, Deer, or Pig	West/East
Order Artiodactyla II	Sheep, Goat, or Deer	West/East
Sus scrofa	Domestic Pig	West/East
Bos taurus	Domestic Cow	West/East
Ovis aries	Domestic Sheep	West
Ovis aries/Capra hircus	Domestic Sheep or Goat	West/East
Bos taurus/Equus sp.	Domestic Cow, Horse, or Ass	West
Subphylum Vertebrata	Other Vertebrate	East

Table B2.
Taxa Identified from Paddy's Alley Phase II

Latin Name	Common Name
Class Osteichthyes	Bony Fish
Family Gadidae	Codfish
Class Aves	Bird
Gavia stellata	Red-Throated Loon
Anser anser	Domestic Goose
Branta canadensis	Canada Goose
Goose spp.	Goose
Duck spp.	Duck
Charadius vociferus	Killdeer
Catoptorphorus semipalmatus	Willet
Family Phasianidae	Grouse, Partridge, or Pheasant
Meleagris gallopavo	Turkey
Gallus gallus	Chicken
Ectopistes migratorius	Passenger Pigeon
Class Mammalia	Mammal
Class Mammalia I	Large Mammal
Class Mammalia II	Medium Mammal
Class Mammalia III	Small Mammal
Canis spp.	Dog or Wolf
Felis domesticus	Domestic Cat
Order Artiodactyla I	Sheep, Goat, Deer, or Pig
Sus scrofa	Domestic Pig
Bos taurus	Domestic Cow
Ovis aries	Domestic Sheep
Capra hircus	Domestic Goat
Ovis aries/Capra hircus	Domestic Sheep or Goat
Bos taurus/Equus sp.	Domestic Cow, Horse, or Ass
Subphylum Vertebrata	Other Vertebrate

Table B3.
Taxa Identified from Paddy's Alley Phase III

Latin Name	Common Name	Sub-Phases
Order Lamniformes	Typical Shark	East
Class Osteichthyes	Bony Fish	West/East
Family Gadidae	Codfish	West/East
Gadus morhua	Atlantic Cod	West
Melanogrammus aeglefinus	Haddock	West/East
Class Aves	Bird	West/East
Class Aves/Mammalia III	Bird/Small Mammal	West
Anser anser	Domestic Goose	East
Branta canadensis	Canada Goose	East
Goose spp.	Goose	East
Anas platyrhynchos	Domestic Duck or Mallard	East
Duck spp.	Duck	East
Family Phasianidae	Grouse, Partridge, or Pheasant	East
Meleagris gallopavo	Turkey	West/East
Gallus gallus	Chicken	West/East
Ectopistes migratorius	Passenger Pigeon	West/East
Class Mammalia	Mammal	West/East
Class Mammalia I	Large Mammal	West/East
Class Mammalia II	Medium Mammal	West/East
Class Mammalia III	Small Mammal	West/East
Sciurus carolinensis	Eastern Gray Squirrel	East
Rattus norvegicus	Norway Rat	East
Felis domesticus	Domestic Cat	West/East
Order Artiodactyla I	Sheep, Goat, Deer, or Pig	West/East
Order Artiodactyla II	Sheep, Goat, or Deer	West/East
Sus scrofa	Domestic Pig	West/East
Odocoileus virginianus	White-Tailed Deer	East
Bos taurus	Domestic Cow	West/East
Ovis aries	Domestic Sheep	West/East
Capra hircus	Domestic Goat	West/East
Ovis aries/Capra hircus	Domestic Sheep or Goat	West/East
Bos taurus/Equus sp.	Domestic Cow, Horse, or Ass	West/East
Subphylum Vertebrata	Other Vertebrate	East

Table B4.
Taxa Identified from Paddy's Alley Phase IV

Latin Name	Common Name	Sub-Phases
Class Osteichthyes	Bony Fish	1W/1E/3W/3E
Acipenser spp.	Sturgeon	3W
Family Gadidae	Codfish	1W/3W/3E
Gadus morhua	Atlantic Cod	1W/2/3W
Melanogrammus aeglefinus	Haddock	1W/2/3W/3E
Morone saxatilis	Striped Bass	3E
Class Aves	Bird	1W/1E/2/3W/3E
Class Aves/Mammalia III	Bird/Small Mammal	3W/3E
Anser anser	Domestic Goose	3W/3E
Goose spp.	Goose	2/3W/3E
Anas platyrhynchos	Domestic Duck or Mallard	1W/2/3W/3E
Aythya spp.	Pochard	3W
Duck spp.	Duck	1E/3W/3E
Family Phasianidae	Grouse, Partridge, or Pheasant	1W/3W
Meleagris gallopavo	Turkey	2/3W/3E
Gallus gallus	Chicken	1W/2/3W/3E
Tympanuchus cupido	Heath Hen	2
Family Columbidae	Pigeon or Dove	3E
Ectopistes migratorius	Passenger Pigeon	1W/1E/2/3W/3E
Class Mammalia	Mammal	1W/1E/2/3W/3E
Class Mammalia I	Large Mammal	1W/1E/2/3W/3E
Class Mammalia II	Medium Mammal	1W/1E/2/3W/3E
Class Mammalia III	Small Mammal	1W/3W/3E
Rattus spp.	Old World Rat	3W/3E
Canis spp.	Dog or Wolf	3E
Felis domesticus	Domestic Cat	3W/3E
Order Artiodactyla I	Sheep, Goat, Deer, or Pig	1W/1E/2/3W/3E
Order Artiodactyla II	Sheep, Goat, or Deer	1W/3W/3E
Sus scrofa	Domestic Pig	1W/1E/2/3W/3E
Bos taurus	Domestic Cow	1W/1E/2/3W/3E
Ovis aries	Domestic Sheep	1W/3W/3E
Capra hircus	Domestic Goat	1W/2/3E
Ovis aries/Capra hircus	Domestic Sheep or Goat	1W/1E/2/3W/3E
Bos taurus/Equus sp.	Domestic Cow, Horse, or Ass	1W/2/3W/3E
Subphylum Vertebrata	Other Vertebrate	1W/3E

Table B5.
Taxa Identified from Paddy's Alley Phase V

Latin Name	Common Name
Class Osteichthyes	Bony Fish
Family Gadidae	Codfish
Class Aves	Bird
Anser anser	Domestic Goose
Duck spp.	Duck
Gallus gallus	Chicken
Ectopistes migratorius	Passenger Pigeon
Class Mammalia	Mammal
Class Mammalia I	Large Mammal
Class Mammalia II	Medium Mammal
Class Mammalia III	Small Mammal
Sus scrofa	Domestic Pig
Bos taurus	Domestic Cow
Ovis aries/Capra hircus	Domestic Sheep or Goat
Bos taurus/Equus sp.	Domestic Cow, Horse, or Ass
Subphylum Vertebrata	Other Vertebrate

Table B6.
Taxa Identified from the Paddy's Alley Phase VI

Latin Name	Common Name
Class Mammalia	Mammal
Class Mammalia I	Large Mammal
Class Mammalia II	Medium Mammal
Order Artiodactyla I	Sheep, Goat, Deer, or Pig
Order Artiodactyla II	Sheep, Goat, or Deer
Sus scrofa	Domestic Pig
Bos taurus	Domestic Cow
Ovis aries	Domestic Sheep
Ovis aries/Capra hircus	Domestic Sheep or Goat
Bos taurus/Equus sp.	Domestic Cow, Horse, or Ass

Table B7.
Taxa Identified from Paddy's Alley Phase VII

Latin Name	Common Name	Sub-Phases
Class Osteichthyes	Bony Fish	West/East
Family Gadidae	Codfish	East
Class Aves	Bird	East
Class Aves/Mammalia III	Bird/Small Mammal	East
Anser anser	Domestic Goose	East
Goose spp.	Goose	East
Anas platyrhynchos	Domestic Duck or Mallard	East
Mergus merganser	Common Merganser	East
Duck spp.	Duck	East
Charadius vociferus	Killdeer	East
Family Phasianidae	Grouse, Partridge, or Pheasant	East
Gallus gallus	Chicken	East
Ectopistes migratorius	Passenger Pigeon	East
Class Mammalia	Mammal	East
Class Mammalia I	Large Mammal	East
Class Mammalia II	Medium Mammal	West/East
Class Mammalia III	Small Mammal	East
Felis domesticus	Domestic Cat	East
Order Artiodactyla I	Sheep, Goat, Deer, or Pig	East
Order Artiodactyla II	Sheep, Goat, or Deer	East
Sus scrofa	Domestic Pig	West/East
Odocoileus virginianus	White-Tailed Deer	East
Bos taurus	Domestic Cow	West/East
Ovis aries	Domestic Sheep	West/East
Ovis aries/Capra hircus	Domestic Sheep or Goat	East
Bos taurus/Equus sp.	Domestic Cow, Horse, or Ass	East
Subphylum Vertebrata	Other Vertebrate	East

Table B8.
Taxa Identified from Paddy's Alley Phase IX

Latin Name	Common Name
Class Mammalia	Mammal
Class Mammalia I	Large Mammal
Class Mammalia II	Medium Mammal
Class Mammalia III	Small Mammal
Sus scrofa	Domestic Pig
Bos taurus	Domestic Cow
Ovis aries/Capra hircus	Domestic Sheep or Goat

Table B9.
Taxa Identified from Cross Street Back Lot Phase I

Latin Name	Common Name	Sub-Phases
Homarus americanus	Lobster	2/5/8/10
Order Lamniformes	Typical Shark	2
Class Osteichthyes	Bony Fish	2/3/5/7/8/10
Family Clupeidae	Herring	2/3/5/8
Alosa pesudoharengus	Alewife	5
Clupea harengus	Atlantic Herring	2/3/5
Family Gadidae	Codfish	5/10
Gadus morhua	Atlantic Cod	2/3/5/8/10
Melanogrammus aeglefinus	Haddock	3/5/8/10
Morone saxatilis	Striped Bass	8
Class Amphibia	Amphibian	
Class Aves	Bird	2/3/5/7/8/10
Goose spp.	Goose	10
Duck spp.	Duck	10
Anas spp.	Dabbling Duck	
Anas platyrhynchos	Domestic Duck or Mallard	10
Family Phasianidae	Grouse, Partridge, or Pheasant	2/5/7/8
Meleagris gallopavo	Turkey	5/10
Gallus gallus	Chicken	2/5/8/10
Ectopistes migratorius	Passenger Pigeon	2/5/7/8/10
Class Mammalia	Mammal	2/3/5/7/8/10
Class Mammalia I	Large Mammal	2/3/5/7/8/10
Class Mammalia II	Medium Mammal	2/3/5/7/8/10
Class Mammalia III	Small Mammal	2/5/7/8/10
Rattus spp.	Old World Rat	5/10
Rattus norvegicus	Norway Rat	5/8/10
Felis domesticus	Domestic Cat	8/10
Order Artiodactyla I	Sheep, Goat, Deer, or Pig	
Order Artiodactyla II	Sheep, Goat, or Deer	5
Sus scrofa	Domestic Pig	2/5/7/8/10
Odocoileus virginianus	White-Tailed Deer	10
Bos taurus	Domestic Cow	2/5/7/8/10
Ovis aries	Domestic Sheep	5/7/8/10
Ovis aries/Capra hircus	Domestic Sheep or Goat	2/3/5/7/8/10
Bos taurus/Equus sp.	Domestic Cow, Horse, or Ass	
Subphylum Vertebrata	Other Vertebrate	2/3/5/7/8/10

Table B10.
Taxa Identified from Cross Street Back Lot Phase II

Latin Name	Common Name	Sub-Phases
Class Osteichthyes	Bony Fish	1/2/3
Family Gadidae	Codfish	1/2/3
Gadus morhua	Atlantic Cod	1/2/3
Melanogrammus aeglefinus	Haddock	1/2/3
Morone saxatilis	Striped Bass	1
Order Testudines	Turtle	1
Class Aves	Bird	1/2/3
Anser anser	Domestic Goose	3
Duck spp.	Duck	1/2
Anas platyrhynchos	Domestic Duck or Mallard	1
Family Phasianidae	Grouse, Partridge, or Pheasant	1/2
Meleagris gallopavo	Turkey	1
Gallus gallus	Chicken	1/2/3
Ectopistes migratorius	Passenger Pigeon	1/2/3
Class Mammalia	Mammal	1/2/3
Class Mammalia I	Large Mammal	1/2/3
Class Mammalia II	Medium Mammal	1/2/3
Class Mammalia III	Small Mammal	1/2/3
Rattus spp.	Old World Rat	1
Felis domesticus	Domestic Cat	1/2
Order Artiodactyla II	Sheep, Goat, or Deer	2
Sus scrofa	Domestic Pig	1/2/3
Bos taurus	Domestic Cow	1/2/3
Ovis aries	Domestic Sheep	1/2/3
Ovis aries/Capra hircus	Domestic Sheep or Goat	1/2/3
Subphylum Vertebrata	Other Vertebrate	1/2/3

Table B11.
Taxa Identified from Cross Street Back Lot Phase III

Latin Name	Common Name
Class Osteichthyes	Bony Fish
Family Gadidae	Codfish
Gadus morhua	Atlantic Cod
Goose spp.	Goose
Melanogrammus aeglefinus	Haddock
Class Aves	Bird
Anas platyrhynchos	Domestic Duck or Mallard
Duck spp.	Duck
Meleagris gallopavo	Turkey
Gallus gallus	Chicken
Ectopistes migratorius	Passenger Pigeon
Class Mammalia	Mammal
Class Mammalia I	Large Mammal
Class Mammalia II	Medium Mammal
Felis domesticus	Domestic Cat
Order Artiodactyla I	Sheep, Goat, Deer, or Pig
Order Artiodactyla II	Sheep, Goat, or Deer
Sus scrofa	Domestic Pig
Bos taurus	Domestic Cow
Ovis aries	Domestic Sheep
Ovis aries/Capra hircus	Domestic Sheep or Goat
Subphylum Vertebrata	Other Vertebrate

Table B12.
Taxa Identified from Cross Street Back Lot Phase IV

Latin Name	Common Name
Class Osteichthyes	Bony Fish
Chelhydra serpentina	Snapping Turtle
Class Aves	Bird
Anser anser	Domestic Goose
Anas platyrhynchos	Domestic Duck or Mallard
Meleagris gallopavo	Turkey
Gallus gallus	Chicken
Ectopistes migratorius	Passenger Pigeon
Class Mammalia	Mammal
Class Mammalia I	Large Mammal
Class Mammalia II	Medium Mammal
Rattus norvegicus	Norway Rat
Order Artiodactyla I	Sheep, Goat, Deer, or Pig
Sus scrofa	Domestic Pig
Bos taurus	Domestic Cow
Ovis aries/Capra hircus	Domestic Sheep or Goat
Bos taurus/Equus sp.	Domestic Cow, Horse, or Ass
Subphylum Vertebrata	Other Vertebrate

Table B13.
Taxa Identified from Cross Street Back Lot Phase V

Latin Name	Common Name
Class Osteichthyes	Bony Fish
Family Gadidae	Codfish
Gadus morhua	Atlantic Cod
Melanogrammus aeglefinus	Haddock
Class Aves	Bird
Anser anser	Domestic Goose
Goose spp.	Goose
Anas platyrhynchos	Domestic Duck or Mallard
Duck spp.	Duck
Meleagris gallopavo	Turkey
Gallus gallus	Chicken
Ectopistes migratorius	Passenger Pigeon
Class Mammalia	Mammal
Class Mammalia I	Large Mammal
Class Mammalia II	Medium Mammal
Class Mammalia III	Small Mammal
Rattus spp.	Old World Rat
Rattus norvegicus	Norway Rat
Order Artiodactyla I	Sheep, Goat, Deer, or Pig
Sus scrofa	Domestic Pig
Odocoileus virginianus	White-Tailed Deer
Bos taurus	Domestic Cow
Ovis aries	Domestic Sheep
Capra hircus	Domestic Goat
Ovis aries/Capra hircus	Domestic Sheep or Goat
Bos taurus/Equus sp.	Domestic Cow, Horse, or Ass
Subphylum Vertebrata	Other Vertebrate

Table B14.
Taxa Identified from Mill Pond Phase I

Latin Name	Common Name
Class Osteichthyes	Bony Fish
Gadus morhua	Atlantic Cod
Class Aves	Bird
Branta bernicula	Brant
Meleagris gallopavo	Turkey
Gallus gallus	Chicken
Family Columbidae	Pigeon or Dove
Ectopistes migratorius	Passenger Pigeon
Class Mammalia	Mammal
Class Mammalia I	Large Mammal
Class Mammalia II	Medium Mammal
Class Mammalia III	Small Mammal
Canis familiaris	Domestic Dog
Sus scrofa	Domestic Pig
Bos taurus	Domestic Cow
Ovis aries	Domestic Sheep
Ovis aries/Capra hircus	Domestic Sheep or Goat

Table B15.
Taxa Identified from Mill Pond Phase III

Latin Name	Common Name
Class Aves	Bird
Duck spp.	Duck
Family Phasianidae	Grouse, Partridge, or Pheasant
Meleagris gallopavo	Turkey
Gallus gallus	Chicken
Ectopistes migratorius	Passenger Pigeon
Class Mammalia I	Large Mammal
Class Mammalia II	Medium Mammal
Order Artiodactyla II	Sheep, Goat, or Deer
Sus scrofa	Domestic Pig
Bos taurus	Domestic Cow
Ovis aries/Capra hircus	Domestic Sheep or Goat

Table B16.
Taxa Identified from Mill Pond Phase IIIa

Latin Name	Common Name
Class Osteichthyes	Bony Fish
Gadus morhua	Atlantic Cod
Melanogrammus aeglefinus	Haddock
Class Aves	Bird
Class Aves/Mammalia III	Bird/Small Mammal
Anser anser	Domestic Goose
Goose spp.	Goose
Duck spp.	Duck
Family Phasianidae	Grouse, Partridge, or Pheasant
Meleagris gallopavo	Turkey
Gallus gallus	Chicken
Family Columbidae	Pigeon or Dove
Ectopistes migratorius	Passenger Pigeon
Class Mammalia	Mammal
Class Mammalia I	Large Mammal
Class Mammalia II	Medium Mammal
Class Mammalia III	Small Mammal
Order Artiodactyla I	Sheep, Goat, Deer, or Pig
Order Artiodactyla II	Sheep, Goat, or Deer
Sus scrofa	Domestic Pig
Odocoileus virginianus	White-Tailed Deer
Bos taurus	Domestic Cow
Ovis aries	Domestic Sheep
Ovis aries/Capra hircus	Domestic Sheep or Goat

Table B17.
Taxa Identified from Mill Pond Phase IV

Latin Name	Common Name
Gadus morhua	Atlantic Cod
Class Aves	Bird
Anser anser	Domestic Goose
Goose spp.	Goose
Duck spp.	Duck
Family Phasianidae	Grouse, Partridge, or Pheasant
Meleagris gallopavo	Turkey
Gallus gallus	Chicken
Ectopistes migratorius	Passenger Pigeon
Class Mammalia I	Large Mammal
Class Mammalia II	Medium Mammal
Rattus norvegicus	Norway Rat
Felis domesticus	Domestic Cat
Sus scrofa	Domestic Pig
Bos taurus	Domestic Cow
Ovis aries	Domestic Sheep
Ovis aries/Capra hircus	Domestic Sheep or Goat

Table B18.
Taxa Identified from Mill Pond Phase V

Latin Name	Common Name
Class Osteichthyes	Bony Fish
Melanogrammus aeglefinus	Haddock
Class Aves	Bird
Goose spp.	Goose
Duck spp.	Duck
Family Phasianidae	Grouse, Partridge, or Pheasant
Meleagris gallopavo	Turkey
Gallus gallus	Chicken
Family Columbidae	Pigeon or Dove
Ectopistes migratorius	Passenger Pigeon
Class Mammalia	Mammal
Class Mammalia I	Large Mammal
Class Mammalia II	Medium Mammal
Rattus spp.	Old World Rat
Order Artiodactyla I	Sheep, Goat, Deer, or Pig
Order Artiodactyla II	Sheep, Goat, or Deer
Sus scrofa	Domestic Pig
Bos taurus	Domestic Cow
Ovis aries	Domestic Sheep
Ovis aries/Capra hircus	Domestic Sheep or Goat
Bos taurus/Equus sp.	Domestic Cow, Horse, or Ass

APPENDIX C.

QUANTIFICATION CHARTS

Table C1.
Summary of Faunal Remains
Paddy's Alley Phase I (Initial Occupation)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Skeletal Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	3	0.8						2.0	<0.1	0.05	0.1
Family Gadidae	1	0.3	1 / 0	5.3	4.8 / 0.0	4.8	0.4	0.5	<0.1	0.02	<0.1
Class Aves	16	4.0						9.7	0.2	0.16	0.3
cf. *Anser anser*	1	0.3	1 / 0	5.3	6.0 / 0.0	6.0	0.5	2.2	0.1	0.04	0.1
Branta canadensis	1	0.3	1 / 0	5.3	6.0 / 0.0	6.0	0.5	2.6	0.1	0.05	0.1
Bucephala albeola	1	0.3	1 / 0	5.3	1.6 / 0.0	1.6	0.1	0.5	<0.1	0.01	<0.1
Meleagris gallopavo	1	0.3	0 / 1	5.3	0.0 / 7.5	7.5	0.6	1.5	<0.1	0.03	0.1
Gallus gallus	3	0.8	1 / 0	5.3	2.5 / 0.0	2.5	0.2	4.4	0.1	0.08	0.1
Ectopistes migratorius	3	0.8	1 / 0	5.3	0.5 / 0.0	0.5	<0.1	0.9	<0.1	0.02	0.0
Class Mammalia	39	9.8						64.2	1.6	1.11	2.1
Class Mammalia I	86	21.6						529.8	13.2	7.44	14.0
Class Mammalia II	86	21.6						141.3	3.5	2.27	4.3
Class Mammalia III	4	1.0						1.4	<0.1	0.04	0.1
Felis domesticus	1	0.3	1 / 0	5.3				2.4	0.1	0.06	0.1
Order Artiodactyla I	11	2.8						27.8	0.7	0.52	1.0
Order Artiodactyla II	2	0.5						10.5	0.3	0.22	0.4
Sus scrofa	24	6.0	2 / 0	10.5	200.0 / 0.0	200.0	15.3	311.1	7.8	4.61	8.7
Bos taurus	69	17.3	2 / 2	21.1	800.0 /100.0	900.0	69.0	2444.0	61.0	29.46	55.4
cf. *Bos taurus*	3	0.8						29.7	0.7	0.56	1.0
Ovis aries	1	0.3	1 / 0	5.3	35.0 / 0.0	35.0	2.7	5.6	0.1	0.12	0.2
Ovis aries/Capra hircus	36	9.0	5 / 0	26.3	175.0 / 0.0	175.0	13.4	332.0	8.3	4.89	9.2
cf. *Ovis aries/Capra hircus*	2	0.5						6.3	0.2	0.14	0.3
Bos taurus/Equus sp.	3	0.8						77.3	1.9	1.32	2.5
Subphylum Vertebrata	1	0.3						0.3	<0.1		
Fish	4	1.0	1 / 0	5.3	4.8 / 0.0	4.8	0.4	2.5	0.1	0.08	0.1
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	5	1.3	3 / 0	15.8	8.1 / 0.0	8.1	0.6	4.0	0.1	0.08	0.1

Note: NISP=Number of identified specimens; MNI=Minimum Number of Individuals; Ad=Adult; IM=Immature.

Table C1 (cont'd).
Summary of Faunal Remains
Paddy's Alley Phase I (Initial Occupation)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	5	1.3	2 / 1	15.8	8.5 / 7.5	16.0	1.2	8.1	0.2	0.15	0.3
Domestic Mammals	138	34.7	9 / 2	57.9	1175.0 /100.0	1275.0	97.8	3206.0	80.0	41.10	77.2
Commensals	1	0.3	1 / 0	5.3				2.4	0.1	0.06	0.1
Wild	9	2.3	4 / 0	21.1	12.9 / 0.0	12.9	1.0	6.5	0.2	0.15	0.3
Domestic	143	35.9	11 / 3	73.7	1183.5 /107.5	1291.0	99.0	3214.1	80.2	41.25	77.5
Identified	163	41.0	16 / 3	100.0	1196.4 /107.5	1303.9	100.0	3259.3	81.3	42.15	79.2
Unidentified	235	59.0						748.7	18.7	11.07	20.8
Totals	398	100.0	16 / 3	100.0	1196.4 /107.5	1303.9	100.0	4008.0	100.0	53.22	100.0

Table C2.
Summary of Faunal Remains
Paddy's Alley Phase I West (Initial Occupation--West Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	2	0.8						1.6	0.1	0.04	0.1
Class Aves	2	0.8						1.3	0.1	0.03	0.1
cf. *Anser anser*	1	0.4	1 / 0	6.3	6.0 / 0.0	6.0	0.5	2.2	0.1	0.04	0.1
Branta canadensis	1	0.4	1 / 0	6.3	6.0 / 0.0	6.0	0.5	2.6	0.1	0.05	0.1
Bucephala albeola	1	0.4	1 / 0	6.3	1.6 / 0.0	1.6	0.1	0.5	0.0	0.01	<0.1
Meleagris gallopavo	1	0.4	0 / 1	6.3	0.0 / 7.5	7.5	0.6	1.5	0.1	0.03	0.1
Gallus gallus	2	0.8	1 / 0	6.3	2.5 / 0.0	2.5	0.2	3.6	0.1	0.07	0.2
Ectopistes migratorius	2	0.8	1 / 0	6.3	0.5 / 0.0	0.5	<0.1	0.7	<0.1	0.02	<0.1
Class Mammalia	35	14.1						52.8	2.2	0.93	2.7
Class Mammalia I	48	19.4						273.8	11.2	4.11	12.0
Class Mammalia II	46	18.5						76.5	3.1	1.30	3.8
Class Mammalia III	4	1.6						1.4	0.1	0.04	0.1
Order Artiodactyla I	7	2.8						18.7	0.8	0.37	1.1
Order Artiodactyla II	1	0.4						6.3	0.3	0.14	0.4
Sus scrofa	16	6.5	2 / 0	12.5	200.0 / 0.0	200.0	15.8	206.8	8.5	3.19	9.3
Bos taurus	44	17.7	2 / 2	25.0	800.0 /100.0	900.0	71.2	1447.2	59.3	18.39	53.8
cf. *Bos taurus*	1	0.4						2.9	0.1	0.07	0.2
Ovis aries	1	0.4	1 / 0	6.3	35.0 / 0.0	35.0	2.8	5.6	0.2	0.12	0.4
Ovis aries/Capra hircus	28	11.3	4 / 0	25.0	140.0 / 0.0	140.0	11.1	251.3	10.3	3.80	11.1
cf. *Ovis aries/Capra hircus*	2	0.8						6.3	0.3	0.14	0.4
Bos taurus/Equus sp.	3	1.2						77.3	3.2	1.32	3.8
Fish	2	0.8						1.6	0.1	0.04	0.1
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	4	1.6	3 / 0	18.8	8.1 / 0.0	8.1	0.6	3.8	0.2	0.08	0.2
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	4	1.6	2 / 1	18.8	8.5 / 7.5	16.0	1.3	7.3	0.3	0.14	0.4
Domestic Mammals	95	38.3	8 / 2	62.5	1140.0 /100.0	1240.0	98.1	1997.4	81.8	27.03	79.0
Commensals	0	0.0						0.0	0.0	0.00	0.0

Table C2 (cont'd).
Summary of Faunal Remains
Paddy's Alley Phase I West (Initial Occupation--West Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Wild	6	2.4	3 / 0	18.8	8.1 / 0.0	8.1	0.6	5.4	0.2	0.12	0.3
Domestic	99	39.9	10 / 3	81.3	1148.5 /107.5	1256.0	99.4	2004.7	82.1	27.17	79.4
Identified	111	44.8	13 / 3	100.0	1156.6 /107.5	1264.1	100.0	2033.5	83.3	27.75	81.1
Unidentified	137	55.2						407.4	16.7	6.45	18.9
Totals	248	100.0	13 / 3	100.0	1156.6 /107.5	1264.1	100.0	2440.9	100.0	34.20	100.0

Table C3.
Summary of Faunal Remains
Paddy's Alley Phase I East (Initial Occupation--East Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad /	IM	Total	Pct.	Skeletal Weight	Pct.	Biomass (kg)	Pct.
Class Osteichthyes	1	0.7							0.4	0.0	0.01	0.1
Family Gadidae	1	0.7	1 / 0	11.1	4.8 /	0.0	4.8	0.5	0.5	0.0	0.02	0.1
Class Aves	14	9.3							8.4	0.5	0.14	0.6
Gallus gallus	1	0.7	1 / 0	11.1	2.5 /	0.0	2.5	0.2	0.8	0.1	0.02	0.1
Ectopistes migratorius	1	0.7	1 / 0	11.1	0.5 /	0.0	0.5	<0.1	0.2	0.0	0.01	<0.1
Class Mammalia	4	2.7							11.4	0.7	0.24	1.0
Class Mammalia I	38	25.3							256.0	16.3	3.87	17.2
Class Mammalia II	40	26.7							64.8	4.1	1.12	5.0
Felis domesticus	1	0.7	1 / 0	11.1					2.4	0.2	0.06	0.3
Order Artiodactyla I	4	2.7							9.1	0.6	0.19	0.9
Order Artiodactyla II	1	0.7							4.2	0.3	0.10	0.4
Sus scrofa	8	5.3	2 / 0	22.2	200.0 /	0.0	200.0	19.2	104.3	6.7	1.72	7.7
Bos taurus	25	16.7	2 / 0	22.2	800.0 /	0.0	800.0	76.7	996.8	63.6	13.15	58.4
cf. *Bos taurus*	2	1.3							26.8	1.7	0.51	2.3
Ovis aries/Capra hircus	8	5.3	1 / 0	11.1	35.0 /	0.0	35.0	3.4	80.7	5.1	1.37	6.1
Subphylum Vertebrata	1	0.7							0.3	<0.1		
Fish	2	1.3	1 / 0	11.1	4.8 /	0.0	4.8	0.5	0.9	0.1	0.04	0.2
Reptiles/Amphibians	0	0.0							0.0	0.0	0.00	0.0
Wild Birds	1	0.7	1 / 0	11.1	0.5 /	0.0	0.5	<0.1	0.2	0.0	0.01	0.0
Wild Mammals	0	0.0							0.0	0.0	0.00	0.0
Domestic Birds	1	0.7	1 / 0	11.1	2.5 /	0.0	2.5	0.2	0.8	0.1	0.02	0.1
Domestic Mammals	43	28.7	5 / 0	55.6	1035.0 /	0.0	1035.0	99.3	1208.6	77.1	16.74	74.4
Commensals	1	0.7	1 / 0	11.1					2.4	0.2	0.06	0.3
Wild	3	2.0	2 / 0	22.2	5.3 /	0.0	5.3	0.5	1.1	0.1	0.04	0.2
Domestic	44	29.3	6 / 0	66.7	1037.5 /	0.0	1037.5	99.5	1209.4	77.2	16.76	74.4

Table C3 (cont'd).
Summary of Faunal Remains
Paddy's Alley Phase I East (Initial Occupation--East Lot)

			MNI		Meat Weight (lbs)			Skeletal		Biomass	
Taxon	NISP	Pct.	Ad / IM	Pct.	Ad / IM	Total	Pct.	Weight	Pct.	(kg)	Pct.
Identified	52	34.7	9 / 0	100.0	1042.8 / 0.0	1042.8	100.0	1225.8	78.2	17.14	76.1
Unidentified	98	65.3						341.3	21.8	5.38	23.9
Totals	150	100.0	9 / 0	100.0	1042.8 / 0.0	1042.8	100.0	1567.1	100.0	22.52	100.0

Table C4.
Summary of Faunal Remains
Paddy's Alley Phase II (Installation of Drain)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	5	0.7						2.5	0.1	0.06	0.1
Family Gadidae	2	0.3	1 / 0	4.0	4.8 / 0.0	4.8	0.3	2.0	0.1	0.07	0.1
Class Aves	22	2.9						8.4	0.2	0.14	0.3
Gavia stellata	1	0.1	1 / 0	4.0	3.5 / 0.0	3.5	0.3	1.3	<0.1	0.03	<0.1
Goose spp.	7	0.9						6.2	0.2	0.11	0.2
Anser anser	1	0.1	1 / 0	4.0	6.0 / 0.0	6.0	0.4	3.2	0.1	0.06	0.1
cf. *Branta canadensis*	1	0.1	1 / 0	4.0	6.0 / 0.0	6.0	0.4	1.2	<0.1	0.02	<0.1
Duck spp.	2	0.3	1 / 0	4.0	2.0 / 0.0	2.0	0.1	0.4	<0.1	0.01	<0.1
Catoptorphorus semipalmatus	1	0.1	1 / 0	4.0	1.4 / 0.0	1.4	0.1	0.1	<0.1	0.00	<0.1
Family Phasianidae	1	0.1						0.6	<0.1	0.01	<0.1
Meleagris gallopavo	1	0.1	1 / 0	4.0	7.5 / 0.0	7.5	0.5	2.1	0.1	0.04	0.1
Gallus gallus	19	2.5	3 / 0	12.0	7.5 / 0.0	7.5	0.5	29.0	0.8	0.44	0.8
Ectopistes migratorius	4	0.5	1 / 0	4.0	0.5 / 0.0	0.5	<0.1	1.3	<0.1	0.03	<0.1
Class Mammalia	109	14.5						124.6	3.3	2.02	3.9
Class Mammalia I	114	15.2						450.7	12.0	6.43	12.3
Class Mammalia II	187	24.9						263.0	7.0	3.96	7.6
Class Mammalia III	1	0.1						0.7	<0.1	0.02	<0.1
Canis spp.	1	0.1	1 / 0	4.0				2.8	0.1	0.07	0.1
Felis domesticus	1	0.1	1 / 0	4.0				0.7	<0.1	0.02	<0.1
Order Artiodactyla I	6	0.8						19.9	0.5	0.39	0.7
Sus scrofa	44	5.9	3 / 1	16.0	300.0 / 50.0	350.0	25.1	355.6	9.5	5.20	9.9
cf. *Sus scrofa*	4	0.5						17.7	0.5	0.35	0.7
Bos taurus	78	10.4	2 / 1	12.0	800.0 / 50.0	850.0	61.0	1523.0	40.7	19.25	36.8
cf. *Bos taurus*	7	0.9						88.4	2.4	1.49	2.8
Ovis aries	10	1.3	3 / 0	12.0	105.0 / 0.0	105.0	7.5	177.9	4.8	2.79	5.3
cf. *Capra hircus*	2	0.3	1 / 0	4.0	35.0 / 0.0	35.0	2.5	55.3	1.5	0.97	1.9
Ovis aries/Capra hircus	77	10.2	4 / 1	20.0	140.0 / 15.0	155.0	11.1	557.3	14.9	7.79	14.9
cf. *Ovis aries/Capra hircus*	4	0.5						22.1	0.6	0.43	0.8
Bos taurus/Equus sp.	2	0.3						8.1	0.2	0.17	0.3
Subphylum Vertebrata	38	5.1						14.3	0.4		

Table C4 (cont'd).
Summary of Faunal Remains
Paddy's Alley Phase II (Installation of Drain)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Fish	7	0.9	1 / 0	4.0	4.8 / 0.0	4.8	0.3	4.5	0.1	0.13	0.2
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	7	0.9	4 / 0	16.0	11.4 / 0.0	11.4	0.8	3.9	0.1	0.08	0.2
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	21	2.8	5 / 0	20.0	21.0 / 0.0	21.0	1.5	34.3	0.9	0.54	1.0
Domestic Mammals	228	30.3	9 / 3	48.0	1240.0 /115.0	1355.0	97.2	2805.4	75.0	38.43	73.4
Commensals	1	0.1	1 / 0	4.0				0.7	<0.1	0.02	<0.1
Wild	14	1.9	5 / 0	20.0	16.2 / 0.0	16.2	1.2	8.4	0.2	0.21	0.4
Domestic	249	33.1	14 / 3	68.0	1261.0 /115.0	1376.0	98.7	2839.7	75.9	38.97	74.4
Identified	276	36.7	22 / 3	100.0	1279.2 /115.0	1394.2	100.0	2876.2	76.9	39.71	75.9
Unidentified	476	63.3						864.2	23.1	12.64	24.1
Totals	752	100.0	22 / 3	100.0	1279.2 /115.0	1394.2	100.0	3740.4	100.0	52.36	100.0

Table C5.
Summary of Faunal Remains
Paddy's Alley Phase III (Ca. 1700-1720 Occupation)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Order Lamniformes	3	0.1	1 / 0	2.4	160.0 / 0.0	160.0	4.9	0.5	<0.1	0.00	<0.1
Class Osteichthyes	46	1.8						19.1	0.2	0.32	0.2
Family Gadidae	5	0.2						2.7	<0.1	0.08	0.1
Gadus morhua	2	0.1	1 / 0	2.4	6.4 / 0.0	6.4	0.2	1.3	<0.1	0.05	<0.1
Melanogrammus aeglefinus	4	0.2	2 / 0	4.9	6.4 / 0.0	6.4	0.2	12.8	0.1	0.26	0.2
Class Aves	35	1.4						13.1	0.1	0.21	0.1
Class Aves/Mammalia III	6	0.2						1.4	<0.1	0.03	<0.1
Goose spp.	13	0.5						17.7	0.1	0.28	0.2
Anser anser	8	0.3	1 / 0	2.4	6.0 / 0.0	6.0	0.2	13.6	0.1	0.22	0.1
Branta canadensis	1	<0.1	1 / 0	2.4	6.0 / 0.0	6.0	0.2	1.0	<0.1	0.02	<0.1
Duck spp.	1	<0.1						0.3	<0.1	0.01	<0.1
Anas platyrhynchos	2	0.1	1 / 0	2.4	2.0 / 0.0	2.0	0.1	2.2	<0.1	0.04	<0.1
Family Phasianidae	1	<0.1						0.4	<0.1	0.01	<0.1
Meleagris gallopavo	9	0.3	1 / 0	2.4	7.5 / 0.0	7.5	0.2	26.3	0.2	0.40	0.3
Gallus gallus	19	0.7	2 / 1	7.3	5.0 / 1.0	6.0	0.2	15.6	0.1	0.25	0.2
Ectopistes migratorius	16	0.6	4 / 0	9.8	2.0 / 0.0	2.0	0.1	5.2	<0.1	0.09	0.1
Class Mammalia	661	25.7						658.5	5.4	9.05	5.9
Class Mammalia I	320	12.4						1785.4	14.6	22.21	14.5
Class Mammalia II	577	22.4						924.0	7.6	12.28	8.0
Class Mammalia III	13	0.5						15.2	0.1	0.31	0.2
Sciurus carolinensis	1	<0.1	1 / 0	2.4	1.0 / 0.0	1.0	<0.1	0.9	<0.1	0.02	<0.1
Rattus norvegicus	1	<0.1	1 / 0	2.4				0.4	<0.1	0.01	<0.1
Felis domesticus	2	0.1	1 / 0	2.4				1.6	<0.1	0.04	<0.1
cf. *Felis domesticus*	1	<0.1						0.6	<0.1	0.02	<0.1
Order Artiodactyla I	27	1.0						74.5	0.6	1.27	0.8
Order Artiodactyla II	4	0.2						13.9	0.1	0.28	0.2
Sus scrofa	119	4.6	5 / 1	14.6	500.0 / 50.0	550.0	16.9	859.5	7.1	11.50	7.5
cf. *Sus scrofa*	7	0.3						26.7	0.2	0.51	0.3
Odocoileus virginianus	1	<0.1	1 / 0	2.4	100.0 / 0.0	100.0	3.1	12.7	0.1	0.26	0.2
Bos taurus	189	7.3	5 / 2	17.1	2000.0 /100.0	2100.0	64.6	4838.5	39.7	54.48	35.7

Table C5 (cont'd).
Summary of Faunal Remains
Paddy's Alley Phase III (Ca. 1700-1720 Occupation)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Pct.	Biomass (kg)	Pct.
cf. *Bos taurus*	21	0.8						558.5	4.6	7.80	5.1
Ovis aries	39	1.5	8 / 0	19.5	280.0 / 0.0	280.0	8.6	550.6	4.5	7.71	5.0
Capra hircus	1	<0.1	1 / 0	2.4	35.0 / 0.0	35.0	1.1	3.4	<0.1	0.08	0.1
cf. *Capra hircus*	1	<0.1						47.2	0.4	0.84	0.6
Ovis aries/Capra hircus	239	9.3	8 / 1	22.0	280.0 / 15.0	295.0	9.1	1267.2	10.4	16.31	10.7
cf. *Ovis aries/Capra hircus*	9	0.3						24.4	0.2	0.47	0.3
Bos taurus/Equus sp.	14	0.5						338.3	2.8	4.97	3.3
Subphylum Vertebrata	156	6.1						52.2	0.4		
Fish	60	2.3	4 / 0	9.8	172.8 / 0.0	172.8	5.3	36.4	0.3	0.71	0.5
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	19	0.7	6 / 0	14.6	10.0 / 0.0	10.0	0.3	8.4	0.1	0.15	0.1
Wild Mammals	2	0.1	2 / 0	4.9	101.0 / 0.0	101.0	3.1	13.6	0.1	0.28	0.2
Domestic Birds	36	1.4	4 / 1	12.2	18.5 / 1.0	19.5	0.6	55.5	0.5	0.87	0.6
Domestic Mammals	639	24.8	18 / 4	53.7	2780.0 /165.0	2945.0	90.7	8514.3	69.9	104.67	68.6
Commensals	4	0.2	2 / 0	4.9				2.6	<0.1	0.07	<0.1
Wild	81	3.1	12 / 0	29.3	283.8 / 0.0	283.8	8.7	58.4	0.5	1.14	0.7
Domestic	675	26.2	22 / 5	65.9	2798.5 /166.0	2964.5	91.3	8569.8	70.3	105.54	69.1
Identified	766	29.8	36 / 5	100.0	3082.3 /166.0	3248.3	100.0	8719.9	71.5	108.31	70.9
Unidentified	1808	70.2						3467.5	28.5	44.38	29.1
Totals	2574	100.0	36 / 5	100.0	3082.3 /166.0	3248.3	100.0	12187.4	100.0	152.69	100.0

Table C6.
Summary of Faunal Remains
Paddy's Alley Phase III West (Ca. 1700-1720 Occupation--West Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Skeletal Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	35	6.0						14.4	0.5	0.26	0.6
Family Gadidae	2	0.3						1.1	<0.1	0.04	0.1
Gadus morhua	2	0.3	1 / 0	6.3	6.4 / 0.0	6.4	0.4	1.3	<0.1	0.05	0.1
Melanogrammus aeglefinus	3	0.5	1 / 0	6.3	3.2 / 0.0	3.2	0.2	10.8	0.4	0.23	0.6
Class Aves	3	0.5						1.4	0.1	0.03	0.1
Class Aves/Mammalia III	6	1.0						1.4	0.1	0.03	0.1
Meleagris gallopavo	1	0.2	1 / 0	6.3	7.5 / 0.0	7.5	0.5	2.0	0.1	0.04	0.1
Gallus gallus	3	0.5	1 / 0	6.3	2.5 / 0.0	2.5	0.2	2.3	0.1	0.04	0.1
Ectopistes migratorius	2	0.3	1 / 0	6.3	0.5 / 0.0	0.5	<0.1	0.5	<0.1	0.01	<0.1
Class Mammalia	146	25.1						143.9	5.2	2.30	5.7
Class Mammalia I	67	11.5						273.1	9.9	4.10	10.2
Class Mammalia II	146	25.1						221.7	8.0	3.40	8.4
Class Mammalia III	2	0.3						0.3	<0.1	0.01	<0.1
Felis domesticus	1	0.2	1 / 0	6.3				0.3	<0.1	0.01	<0.1
Order Artiodactyla I	8	1.4						25.7	0.9	0.49	1.2
Order Artiodactyla II	2	0.3						5.7	0.2	0.13	0.3
Sus scrofa	26	4.5	2 / 0	12.5	200.0 / 0.0	200.0	12.6	215.1	7.8	3.31	8.2
cf. *Sus scrofa*	2	0.3						5.7	0.2	0.13	0.3
Bos taurus	43	7.4	3 / 1	25.0	1200.0 / 50.0	1250.0	78.6	1123.0	40.6	14.63	36.3
Ovis aries	16	2.7	3 / 1	25.0	105.0 / 15.0	120.0	7.5	248.5	9.0	3.77	9.3
cf. *Capra hircus*	1	0.2	1 / 0	6.3	35.0 / 0.0	35.0	2.2	47.2	1.7	0.84	2.1
Ovis aries/Capra hircus	57	9.8	3 / 1	25.0	105.0 / 15.0	120.0	7.5	269.1	9.7	4.05	10.0
cf. *Ovis aries/Capra hircus*	2	0.3						4.3	0.2	0.10	0.2
Bos taurus/Equus sp.	6	1.0						147.1	5.3	2.35	5.8
Fish	42	7.2	2 / 0	12.5	9.6 / 0.0	9.6	0.6	27.6	1.0	0.57	1.4
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	2	0.3	1 / 0	6.3	0.5 / 0.0	0.5	<0.1	0.5	<0.1	0.01	<0.1
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	4	0.7	2 / 0	12.5	10.0 / 0.0	10.0	0.6	4.3	0.2	0.08	0.2

Table C6 (cont'd).
Summary of Faunal Remains
Paddy's Alley Phase III West (Ca. 1700-1720 Occupation--West Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Domestic Mammals	153	26.3	8 / 2	62.5	1505.0 / 65.0	1570.0	98.7	2060.0	74.5	29.17	72.3
Commensals	1	0.2	1 / 0	6.3				0.3	<0.1	0.01	<0.1
Wild	44	7.6	3 / 0	18.8	10.1 / 0.0	10.1	0.6	28.1	1.0	0.58	1.4
Domestic	157	27.0	10 / 2	75.0	1515.0 / 65.0	1580.0	99.4	2064.3	74.6	29.25	72.5
Identified	183	31.4	14 / 2	100.0	1525.1 / 65.0	1590.1	100.0	2111.1	76.3	30.23	75.0
Unidentified	399	68.6						654.8	23.7	10.09	25.0
Totals	582	100.0	14 / 2	100.0	1525.1 / 65.0	1590.1	100.0	2765.9	100.0	40.32	100.0

Table C7.
Summary of Faunal Remains
Paddy's Alley Phase III East (Ca. 1700-1720 Occupation--East Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Order Lamniformes	3	0.2	1 / 0	2.9	160.0 / 0.0	160.0	7.1	0.5	<0.1	0.00	<0.1
Class Osteichthyes	11	0.6						4.7	<0.1	0.10	0.1
Family Gadidae	3	0.2						1.6	<0.1	0.06	<0.1
Melanogrammus aeglefinus	1	0.1	1 / 0	2.9	3.2 / 0.0	3.2	0.1	2.0	<0.1	0.07	0.1
Class Aves	32	1.6						11.7	0.1	0.19	0.2
Goose spp.	13	0.7						17.7	0.2	0.28	0.2
Anser anser	8	0.4	1 / 0	2.9	6.0 / 0.0	6.0	0.3	13.6	0.1	0.22	0.2
Branta canadensis	1	0.1	1 / 0	2.9	6.0 / 0.0	6.0	0.3	1.0	<0.1	0.02	<0.1
Duck spp.	1	0.1						0.3	<0.1	0.01	<0.1
Anas platyrhynchos	2	0.1	1 / 0	2.9	2.0 / 0.0	2.0	0.1	2.2	<0.1	0.04	<0.1
Family Phasianidae	1	0.1						0.4	<0.1	0.01	<0.1
Meleagris gallopavo	8	0.4	1 / 0	2.9	7.5 / 0.0	7.5	0.3	24.3	0.3	0.37	0.3
Gallus gallus	16	0.8	2 / 1	8.8	5.0 / 1.0	6.0	0.3	13.3	0.1	0.22	0.2
Ectopistes migratorius	14	0.7	4 / 0	11.8	2.0 / 0.0	2.0	0.1	4.7	<0.1	0.08	0.1
Class Mammalia	515	25.9						514.6	5.5	7.25	6.0
Class Mammalia I	253	12.7						1512.3	16.1	19.13	15.9
Class Mammalia II	431	21.6						702.3	7.5	9.59	8.0
Class Mammalia III	11	0.6						14.9	0.2	0.30	0.2
Sciurus carolinensis	1	0.1	1 / 0	2.9	1.0 / 0.0	1.0	<0.1	0.9	<0.1	0.02	<0.1
Rattus norvegicus	1	0.1	1 / 0	2.9				0.4	<0.1	0.01	<0.1
Felis domesticus	1	0.1	1 / 0	2.9				1.3	<0.1	0.03	<0.1
cf. *Felis domesticus*	1	0.1						0.6	<0.1	0.02	<0.1
Order Artiodactyla I	19	1.0						48.8	0.5	0.87	0.7
Order Artiodactyla II	2	0.1						8.2	0.1	0.18	0.1
Sus scrofa	93	4.7	4 / 1	14.7	400.0 / 50.0	450.0	19.8	644.4	6.8	8.88	7.4
cf. *Sus scrofa*	5	0.3						21.0	0.2	0.41	0.3
Odocoileus virginianus	1	0.1	1 / 0	2.9	100.0 / 0.0	100.0	4.4	12.7	0.1	0.26	0.2
Bos taurus	146	7.3	3 / 2	14.7	1200.0 /100.0	1300.0	57.3	3715.5	39.4	42.96	35.7
cf. *Bos taurus*	21	1.1						558.5	5.9	7.80	6.5

Table C7 (cont'd).
Summary of Faunal Remains
Paddy's Alley Phase III East (Ca. 1700-1720 Occupation--East Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Ovis aries	23	1.2	6 / 0	17.6	210.0 / 0.0	210.0	9.3	302.1	3.2	4.49	3.7
Capra hircus	1	0.1	1 / 0	2.9	35.0 / 0.0	35.0	1.5	3.4	0.0	0.08	0.1
Ovis aries/Capra hircus	182	9.1	6 / 1	20.6	210.0 / 15.0	225.0	9.9	998.1	10.6	13.16	10.9
cf. *Ovis aries/Capra hircus*	7	0.4						20.1	0.2	0.39	0.3
Bos taurus/Equus sp.	8	0.4						191.2	2.0	2.97	2.5
Subphylum Vertebrata	156	7.8						52.2	0.6		
Fish	18	0.9	2 / 0	5.9	163.2 / 0.0	163.2	7.2	8.8	0.1	0.22	0.2
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	17	0.9	6 / 0	17.6	10.0 / 0.0	10.0	0.4	7.9	0.1	0.15	0.1
Wild Mammals	2	0.1	2 / 0	5.9	101.0 / 0.0	101.0	4.5	13.6	0.1	0.28	0.2
Domestic Birds	32	1.6	4 / 1	14.7	18.5 / 1.0	19.5	0.9	51.2	0.5	0.81	0.7
Domestic Mammals	486	24.4	13 / 4	50.0	1810.0 /165.0	1975.0	87.1	6454.3	68.5	81.14	67.4
Commensals	3	0.2	2 / 0	5.9				2.3	<0.1	0.06	0.1
Wild	37	1.9	12 / 0	29.4	274.2 / 0.0	274.2	12.1	30.3	0.3	0.65	0.5
Domestic	518	26.0	17 / 5	64.7	1828.5 /166.0	1994.5	87.9	6505.5	69.0	81.94	68.0
Identified	583	29.3	29 / 5	100.0	2102.7 /166.0	2268.7	100.0	6608.8	70.1	83.89	69.6
Unidentified	1409	70.7						2812.7	29.9	36.56	30.4
Totals	1992	100.0	29 / 5	100.0	2102.7 /166.0	2268.7	100.0	9421.5	100.0	120.46	100.0

Table C8.
Summary of Faunal Remains
Paddy's Alley Phase IV (Ca. 1720-1730s Occupation)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	164	2.9						75.2	0.2	0.98	0.3
Acipenser spp.	3	0.1	1 / 0	1.0	100.0 / 0.0	100.0	1.9	15.5	<0.1	0.30	0.1
Family Gadidae	43	0.8						30.8	0.1	0.49	0.1
Gadus morhua	22	0.4	4 / 0	4.0	25.6 / 0.0	25.6	0.5	33.5	0.1	0.52	0.1
Melanogrammus aeglefinus	63	1.1	11 / 0	11.0	35.2 / 0.0	35.2	0.7	96.9	0.3	1.15	0.3
cf. *Melanogrammus aeglefinus*	3	0.1						22.0	0.1	0.38	0.1
cf. *Morone saxatilis*	1	<0.1	1 / 0	1.0	7.5 / 0.0	7.5	0.1	1.6	<0.1	0.02	<0.1
Class Aves	42	0.7						14.9	<0.1	0.24	0.1
Class Aves/Mammalia III	12	0.2						4.4	<0.1	0.08	<0.1
Goose spp.	9	0.2						10.8	<0.1	0.18	0.1
Anser anser	4	0.1	2 / 0	2.0	12.0 / 0.0	12.0	0.2	14.7	<0.1	0.24	0.1
cf. *Anser anser*	1	<0.1						1.2	<0.1	0.02	<0.1
Duck spp.	14	0.2						13.5	<0.1	0.22	0.1
Anas platyrhynchos	9	0.2	3 / 0	3.0	6.0 / 0.0	6.0	0.1	10.1	<0.1	0.17	<0.1
cf. *Anas platyrhynchos*	1	<0.1						0.2	<0.1	0.01	<0.1
Aythya spp.	1	<0.1	1 / 0	1.0	1.0 / 0.0	1.0	<0.1	3.2	<0.1	0.06	<0.1
Family Phasianidae	4	0.1						1.7	<0.1	0.03	<0.1
Meleagris gallopavo	15	0.3	2 / 1	3.0	15.0 / 7.5	22.5	0.4	45.7	0.1	0.66	0.2
Gallus gallus	57	1.0	7 / 2	9.0	17.5 / 2.0	19.5	0.4	61.2	0.2	0.86	0.2
Tympanuchus cupido	1	<0.1	1 / 0	1.0	1.4 / 0.0	1.4	<0.1	0.5	<0.1	0.01	<0.1
Family Columbidae	1	<0.1	1 / 0	1.0	0.5 / 0.0	0.5	<0.1	0.2	<0.1	0.01	<0.1
Ectopistes migratorius	33	0.6	7 / 1	8.0	3.5 / 0.5	4.0	0.1	8.1	<0.1	0.14	<0.1
Class Mammalia	810	14.5						912.7	2.9	12.14	3.4
Class Mammalia I	583	10.4						3431.5	11.0	39.99	11.3
Class Mammalia II	1254	22.4						1923.1	6.1	23.75	6.7
Class Mammalia III	29	0.5						9.2	<0.1	0.19	0.1
Rattus spp.	7	0.1	2 / 0	2.0				1.7	<0.1	0.04	<0.1
Canis spp.	1	<0.1	1 / 0	1.0				2.1	<0.1	0.05	<0.1
Felis domesticus	41	0.7	2 / 3	5.0				34.3	0.1	0.63	0.2
Order Artiodactyla I	73	1.3						211.0	0.7	3.25	0.9

Table C9.
Summary of Faunal Remains
Paddy's Alley Phase IV West (Ca. 1720-1730s Occupation--West Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM		Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Pct.	Biomass (kg)	Pct.
Class Osteichthyes	139	5.0							59.5	0.4	0.81	0.5
Acipenser spp.	3	0.1	1 / 0	1.6	100.0 /	0.0	100.0	3.8	15.5	0.1	0.30	0.2
Family Gadidae	40	1.4							27.6	0.2	0.45	0.3
Gadus morhua	22	0.8	4 / 0	6.5	25.6 /	0.0	25.6	1.0	33.5	0.2	0.52	0.3
Melanogrammus aeglefinus	57	2.0	9 / 0	14.5	28.8 /	0.0	28.8	1.1	79.5	0.6	0.99	0.6
cf. *Melanogrammus aeglefinus*	2	0.1							0.6	<0.1	0.03	<0.1
Class Aves	19	0.7							5.8	<0.1	0.10	0.1
Class Aves/Mammalia III	3	0.1							1.4	<0.1	0.03	<0.1
Goose spp.	7	0.3							7.2	0.1	0.12	0.1
Anser anser	1	<0.1	2 / 0	3.2	12.0 /	0.0	12.0	0.5	5.3	<0.1	0.09	0.1
cf. *Anser anser*	1	<0.1							1.2	<0.1	0.02	<0.1
Duck spp.	4	0.1							3.2	<0.1	0.06	<0.1
Anas platyrhynchos	5	0.2	3 / 0	4.8	6.0 /	0.0	6.0	0.2	4.0	<0.1	0.07	<0.1
Aythya spp.	1	<0.1	1 / 0	1.6	1.0 /	0.0	1.0	<0.1	3.2	<0.1	0.06	<0.1
Family Phasianidae	4	0.1							1.7	<0.1	0.03	<0.1
Meleagris gallopavo	4	0.1	1 / 0	1.6	7.5 /	0.0	7.5	0.3	11.2	0.1	0.18	0.1
Gallus gallus	30	1.1	5 / 2	11.3	12.5 /	2.0	14.5	0.5	37.2	0.3	0.55	0.3
Tympanuchus cupido	1	<0.1	1 / 0	1.6	1.4 /	0.0	1.4	0.1	0.5	<0.1	0.01	<0.1
Ectopistes migratorius	17	0.6	3 / 1	6.5	1.5 /	0.5	2.0	0.1	3.6	<0.1	0.07	<0.1
Class Mammalia	418	15.0							397.6	2.8	5.75	3.2
Class Mammalia I	292	10.5							1611.2	11.2	20.25	11.4
Class Mammalia II	641	23.0							941.1	6.5	12.48	7.0
Class Mammalia III	19	0.7							7.9	0.1	0.17	0.1
Rattus spp.	2	0.1	1 / 0	1.6					0.3	<0.1	0.01	<0.1
Felis domesticus	1	<0.1	1 / 0	1.6					1.7	<0.1	0.04	<0.1
Order Artiodactyla I	40	1.4							127.4	0.9	2.06	1.2
Order Artiodactyla II	17	0.6							70.2	0.5	1.21	0.7
cf. Order Artiodactyla II	3	0.1							6.8	<0.1	0.15	0.1
Sus scrofa	157	5.6	6 / 2	12.9	600.0 /	100.0	700.0	26.3	1167.2	8.1	15.15	8.5
cf. *Sus scrofa*	7	0.3							22.7	0.2	0.44	0.2

Table C9 (cont'd).
Summary of Faunal Remains
Paddy's Alley Phase IV West (Ca. 1720-1730s Occupation--West Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Bos taurus	226	8.1	3 / 3	9.7	1200.0 /150.0	1350.0	50.7	5703.8	39.7	63.18	35.6
cf. *Bos taurus*	12	0.4						265.4	1.8	4.00	2.3
Ovis aries	47	1.7	10 / 0	16.1	350.0 / 0.0	350.0	13.1	758.9	5.3	10.28	5.8
cf. *Capra hircus*	2	0.1	1 / 0	1.6	35.0 / 0.0	35.0	1.3	93.4	0.6	1.56	0.9
Ovis aries/Capra hircus	263	9.4	11 / 2	21.0	385.0 / 30.0	415.0	15.6	2087.6	14.5	25.57	14.4
cf. *Ovis aries/Capra hircus*	8	0.3						16.1	0.1	0.32	0.2
Bos taurus/Equus sp.	28	1.0						754.0	5.2	10.22	5.8
Subphylum Vertebrata	248	8.9						35.8	0.2		
Fish	263	9.4	14 / 0	22.6	154.4 / 0.0	154.4	5.8	216.2	1.5	3.10	1.7
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	24	0.9	8 / 1	14.5	9.9 / 0.5	10.4	0.4	11.3	0.1	0.21	0.1
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	36	1.3	8 / 2	16.1	32.0 / 2.0	34.0	1.3	54.9	0.4	0.85	0.5
Domestic Mammals	750	26.9	20 / 7	43.5	2185.0 /280.0	2465.0	92.5	10869.1	75.6	130.72	73.7
Commensals	3	0.1	2 / 0	3.2				2.0	<0.1	0.05	<0.1
Wild	287	10.3	22 / 1	37.1	164.3 / 0.5	164.8	6.2	227.5	1.6	3.31	1.9
Domestic	786	28.2	28 / 9	59.7	2217.0 /282.0	2499.0	93.8	10924.0	76.0	131.57	74.2
Identified	1015	36.4	52 /10	100.0	2381.3 /282.5	2663.8	100.0	11311.9	78.7	137.78	77.7
Unidentified	1776	63.6						3058.9	21.3	39.56	22.3
Totals	2791	100.0	52 /10	100.0	2381.3 /282.5	2663.8	100.0	14370.8	100.0	177.33	100.0

Table C10.
Summary of Faunal Remains
Paddy's Alley Phase IV East (Ca. 1720-1730s Occupation--East Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Skeletal Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	25	0.9						15.7	0.1	0.28	0.1
Family Gadidae	3	0.1						3.2	<0.1	0.09	<0.1
Melanogrammus aeglefinus	6	0.2	3 / 0	5.2	9.6 / 0.0	9.6	0.3	17.4	0.1	0.32	0.2
cf. *Melanogrammus aeglefinus*	1	<0.1						21.4	0.1	0.38	0.2
cf. *Morone saxatilis*	1	<0.1	1 / 0	1.7	7.5 / 0.0	7.5	0.2	1.6	<0.1	0.02	<0.1
Class Aves	23	0.8						9.1	0.1	0.15	0.1
Class Aves/Mammalia III	9	0.3						3.0	<0.1	0.06	<0.1
Goose spp.	2	0.1						3.6	<0.1	0.07	<0.1
Anser anser	3	0.1	1 / 0	1.7	6.0 / 0.0	6.0	0.2	9.4	0.1	0.16	0.1
Duck spp.	10	0.4						10.3	0.1	0.17	0.1
Anas platyrhynchos	4	0.1	3 / 0	5.2	6.0 / 0.0	6.0	0.2	6.1	<0.1	0.11	0.1
cf. *Anas platyrhynchos*	1	<0.1						0.2	<0.1	0.01	<0.1
Meleagris gallopavo	11	0.4	2 / 1	5.2	15.0 / 7.5	22.5	0.6	34.5	0.2	0.51	0.3
Gallus gallus	27	1.0	4 / 0	6.9	10.0 / 0.0	10.0	0.3	24.0	0.1	0.37	0.2
Family Columbidae	1	<0.1	1 / 0	1.7	0.5 / 0.0	0.5	<0.1	0.2	<0.1	0.01	<0.1
Ectopistes migratorius	16	0.6	4 / 0	6.9	2.0 / 0.0	2.0	0.1	4.5	<0.1	0.08	<0.1
Class Mammalia	392	13.9						515.1	3.0	7.26	3.6
Class Mammalia I	291	10.3						1820.3	10.8	22.60	11.1
Class Mammalia II	613	21.8						982.0	5.8	12.97	6.4
Class Mammalia III	10	0.4						1.3	<0.1	0.03	<0.1
Rattus spp.	5	0.2	2 / 0	3.4				1.4	<0.1	0.04	<0.1
Canis spp.	1	<0.1	1 / 0	1.7				2.1	<0.1	0.05	<0.1
Felis domesticus	40	1.4	2 / 2	6.9				32.6	0.2	0.61	0.3
Order Artiodactyla I	33	1.2						83.6	0.5	1.41	0.7
Order Artiodactyla II	11	0.4						47.4	0.3	0.85	0.4
Sus scrofa	159	5.7	6 / 2	13.8	600.0 / 100.0	700.0	18.5	1335.2	7.9	17.10	8.4
cf. *Sus scrofa*	10	0.4						23.2	0.1	0.45	0.2
Bos taurus	273	9.7	6 / 4	17.2	2400.0 / 200.0	2600.0	68.8	7558.1	44.7	81.39	40.1
cf. *Bos taurus*	57	2.0						888.9	5.3	11.86	5.8
Ovis aries	35	1.2	9 / 0	15.5	315.0 / 0.0	315.0	8.3	551.7	3.3	7.72	3.8

Table C10 (cont'd).
Summary of Faunal Remains
Paddy's Alley Phase IV East (Ca. 1720-1730s Occupation--East Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Capra hircus	3	0.1	2 / 0	3.4	70.0 / 0.0	70.0	1.9	55.1	0.3	0.97	0.5
cf. *Capra hircus*	3	0.1						50.7	0.3	0.90	0.4
Ovis aries/Capra hircus	247	8.8	11 / 2	22.4	385.0 / 30.0	415.0	11.0	1951.8	11.5	24.07	11.8
cf. *Ovis aries/Capra hircus*	9	0.3						32.9	0.2	0.61	0.3
Bos taurus/Equus sp.	27	1.0						690.9	4.1	9.45	4.7
Subphylum Vertebrata	452	16.1						125.9	0.7		
Fish	36	1.3	4 / 0	6.9	17.1 / 0.0	17.1	0.5	59.3	0.4	1.09	0.5
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	22	0.8	8 / 0	13.8	8.5 / 0.0	8.5	0.2	11.0	0.1	0.20	0.1
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	41	1.5	7 / 1	13.8	31.0 / 7.5	38.5	1.0	67.9	0.4	1.04	0.5
Domestic Mammals	823	29.2	23 / 8	53.4	3385.0 / 330.0	3715.0	98.3	13138.5	77.7	154.51	76.1
Commensals	45	1.6	4 / 2	10.3				34.0	0.2	0.64	0.3
Wild	58	2.1	12 / 0	20.7	25.6 / 0.0	25.6	0.7	70.3	0.4	1.28	0.6
Domestic	864	30.7	30 / 9	67.2	3416.0 / 337.5	3753.5	99.3	13206.4	78.1	155.55	76.6
Identified	1008	35.8	47 / 11	100.0	3441.6 / 337.5	3779.1	100.0	13445.0	79.5	159.80	78.7
Unidentified	1806	64.2						3469.4	20.5	43.29	21.3
Totals	2814	100.0	47 / 11	100.0	3441.6 / 337.5	3779.1	100.0	16914.4	100.0	203.08	100.0

Table C11.
Summary of Faunal Remains
Paddy's Alley Phase IV-1 West (Ca. 1720-1725 Privy--West Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	90	10.9						20.0	0.4	0.33	0.5
Family Gadidae	35	4.2						22.2	0.5	0.39	0.6
Gadus morhua	11	1.3	2 / 0	7.4	12.8 / 0.0	12.8	0.8	6.9	0.1	0.16	0.3
Melanogrammus aeglefinus	41	5.0	4 / 0	14.8	12.8 / 0.0	12.8	0.8	39.9	0.9	0.60	0.9
cf. *Melanogrammus aeglefinus*	1	0.1						0.3	<0.1	0.02	<0.1
Class Aves	7	0.8						1.2	<0.1	0.02	<0.1
Anas platyrhynchos	2	0.2	1 / 0	3.7	2.0 / 0.0	2.0	0.1	2.1	<0.1	0.04	0.1
Family Phasianidae	2	0.2						0.9	<0.1	0.02	0.0
Gallus gallus	6	0.7	1 / 1	7.4	2.5 / 1.0	3.5	0.2	7.7	0.2	0.13	0.2
Ectopistes migratorius	3	0.4	1 / 0	3.7	0.5 / 0.0	0.5	<0.1	0.4	<0.1	0.01	<0.1
Class Mammalia	40	4.8						32.6	0.7	0.61	1.0
Class Mammalia I	53	6.4						308.2	6.6	4.57	7.2
Class Mammalia II	90	10.9						131.2	2.8	2.12	3.3
Class Mammalia III	8	1.0						5.9	0.1	0.13	0.2
Order Artiodactyla I	18	2.2						68.3	1.5	1.18	1.9
Order Artiodactyla II	1	0.1						2.1	<0.1	0.05	0.1
Sus scrofa	29	3.5	2 / 1	11.1	200.0 / 50.0	250.0	16.5	251.9	5.4	3.81	6.0
cf. *Sus scrofa*	2	0.2						4.4	0.1	0.10	0.2
Bos taurus	62	7.5	2 / 2	14.8	800.0 /100.0	900.0	59.5	2241.9	47.8	27.26	43.1
cf. *Bos taurus*	5	0.6						158.8	3.4	2.52	4.0
Ovis aries	8	1.0	3 / 0	11.1	105.0 / 0.0	105.0	6.9	175.3	3.7	2.75	4.3
cf. *Capra hircus*	1	0.1	1 / 0	3.7	35.0 / 0.0	35.0	2.3	23.9	0.5	0.46	0.7
Ovis aries/Capra hircus	49	5.9	9 / 1	37.0	315.0 / 15.0	330.0	21.8	721.8	15.4	9.83	15.5
cf. *Ovis aries/Capra hircus*	4	0.5						9.4	0.2	0.20	0.3
Bos taurus/Equus sp.	11	1.3						414.8	8.8	5.97	9.4
Subphylum Vertebrata	248	30.0						35.8	0.8		
Fish	178	21.5	6 / 0	22.2	25.6 / 0.0	25.6	1.7	89.3	1.9	1.49	2.4
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	5	0.6	2 / 0	7.4	2.5 / 0.0	2.5	0.2	2.5	0.1	0.05	0.1

Table C11 (cont'd).
Summary of Faunal Remains
Paddy's Alley Phase IV-1 West (Ca. 1720-1725 Privy--West Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	6	0.7	1 / 1	7.4	2.5 / 1.0	3.5	0.2	7.7	0.2	0.13	0.2
Domestic Mammals	171	20.7	13 / 4	63.0	1315.0 /165.0	1480.0	97.9	4002.2	85.4	52.90	83.6
Commensals	0	0.0						0.0	0.0	0.00	0.0
Wild	183	22.1	8 / 0	29.6	28.1 / 0.0	28.1	1.9	91.8	2.0	1.54	2.4
Domestic	177	21.4	14 / 5	70.4	1317.5 /166.0	1483.5	98.1	4009.9	85.5	53.03	83.8
Identified	291	35.2	22 / 5	100.0	1345.6 /166.0	1511.6	100.0	4153.0	88.6	55.48	87.7
Unidentified	536	64.8						534.9	11.4	7.78	12.3
Totals	827	100.0	22 / 5	100.0	1345.6 /166.0	1511.6	100.0	4687.9	100.0	63.27	100.0

Table C12.
Summary of Faunal Remains
Paddy's Alley Phase IV-1 East (Ca. 1720-1725 Privy--West Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	1	0.5						0.2	<0.1	0.01	0.1
Class Aves	4	1.8						2.4	0.3	0.05	0.3
Duck spp.	1	0.5	1 / 0	16.7	2.0 / 0.0	2.0	0.3	0.4	<0.1	0.01	0.1
Ectopistes migratorius	3	1.4	1 / 0	16.7	0.5 / 0.0	0.5	0.1	0.6	0.1	0.01	0.1
Class Mammalia	25	11.3						14.0	1.5	0.28	2.0
Class Mammalia I	25	11.3						123.4	13.4	2.01	13.9
Class Mammalia II	111	50.0						105.8	11.5	1.75	12.1
Order Artiodactyla I	4	1.8						6.5	0.7	0.14	1.0
Sus scrofa	11	5.0	1 / 0	16.7	100.0 / 0.0	100.0	17.0	106.8	11.6	1.76	12.2
cf. *Sus scrofa*	1	0.5						1.8	0.2	0.05	0.3
Bos taurus	15	6.8	1 / 1	33.3	400.0 / 50.0	450.0	76.6	468.5	50.7	6.66	46.2
cf. *Bos taurus*	3	1.4						26.9	2.9	0.51	3.5
Ovis aries/Capra hircus	17	7.7	1 / 0	16.7	35.0 / 0.0	35.0	6.0	63.1	6.8	1.10	7.6
cf. *Ovis aries/Capra hircus*	1	0.5						3.6	0.4	0.08	0.6
Fish	1	0.5						0.2	0.0	0.01	0.1
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	3	1.4	1 / 0	16.7	0.5 / 0.0	0.5	0.1	0.6	0.1	0.01	0.1
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	0	0.0						0.0	0.0	0.00	0.0
Domestic Mammals	48	21.6	3 / 1	66.7	535.0 / 50.0	585.0	99.6	670.7	72.6	10.16	70.5
Commensals	0	0.0						0.0	0.0	0.00	0.0
Wild	4	1.8	1 / 0	16.7	0.5 / 0.0	0.5	0.1	0.8	0.1	0.02	0.1
Domestic	48	21.6	3 / 1	66.7	535.0 / 50.0	585.0	99.6	670.7	72.6	10.16	70.5
Identified	56	25.2	5 / 1	100.0	537.5 / 50.0	587.5	100.0	678.2	73.4	10.32	71.6
Unidentified	166	74.8						245.8	26.6	4.09	28.4
Totals	222	100.0	5 / 1	100.0	537.5 / 50.0	587.5	100.0	924.0	100.0	14.41	100.0

Table C13.
Summary of Faunal Remains
Paddy's Alley Phase IV-2 (Ca. 1725-1730 Privy)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Skeletal Pct.	Biomass (kg)	Biomass Pct.
Gadus morhua	1	1.6	1 / 0	7.1	6.4 / 0.0	6.4	0.9	11.2	1.4	0.23	1.7
Melanogrammus aeglefinus	1	1.6	1 / 0	7.1	3.2 / 0.0	3.2	0.4	1.1	0.1	0.04	0.3
Class Aves	4	6.3						0.4	<0.1	0.01	0.1
Goose spp.	1	1.6						0.8	0.1	0.02	0.1
Anas platyrhynchos	2	3.1	1 / 0	7.1	2.0 / 0.0	2.0	0.3	1.0	0.1	0.02	0.1
Meleagris gallopavo	1	1.6	1 / 0	7.1	7.5 / 0.0	7.5	1.0	5.4	0.7	0.10	0.7
Gallus gallus	2	3.1	2 / 0	14.3	5.0 / 0.0	5.0	0.7	4.3	0.5	0.08	0.6
Tympanuchus cupido	1	1.6	1 / 0	7.1	1.4 / 0.0	1.4	0.2	0.5	0.1	0.01	0.1
Ectopistes migratorius	1	1.6	1 / 0	7.1	0.5 / 0.0	0.5	0.1	0.2	<0.1	0.01	<0.1
Class Mammalia	1	1.6						2.6	0.3	0.06	0.5
Class Mammalia I	8	12.5						142.2	17.6	2.28	16.9
Class Mammalia II	14	21.9						42.3	5.2	0.77	5.7
Order Artiodactyla I	4	6.3						19.2	2.4	0.38	2.8
Sus scrofa	7	10.9	2 / 1	21.4	200.0 / 50.0	250.0	33.5	150.9	18.6	2.40	17.8
Bos taurus	6	9.4	1 / 0	7.1	400.0 / 0.0	400.0	53.6	146.0	18.0	2.33	17.3
cf. *Bos taurus*	1	1.6						25.4	3.1	0.48	3.6
cf. *Capra hircus*	1	1.6	1 / 0	7.1	35.0 / 0.0	35.0	4.7	69.5	8.6	1.20	8.9
Ovis aries/Capra hircus	7	10.9	2 / 0	14.3	70.0 / 0.0	70.0	9.4	143.1	17.7	2.29	17.0
Bos taurus/Equus sp.	1	1.6						43.8	5.4	0.79	5.9
Fish	2	3.1	2 / 0	14.3	9.6 / 0.0	9.6	1.3	12.3	1.5	0.27	2.0
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	4	6.3	3 / 0	21.4	3.9 / 0.0	3.9	0.5	1.7	0.2	0.04	0.3
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	3	4.7	3 / 0	21.4	12.5 / 0.0	12.5	1.7	9.7	1.2	0.17	1.3
Domestic Mammals	23	35.9	5 / 1	42.9	670.0 / 50.0	720.0	96.5	578.7	71.5	9.50	70.4
Commensals	0	0.0						0.0	0.0	0.00	0.0
Wild	6	9.4	5 / 0	35.7	13.5 / 0.0	13.5	1.8	14.0	1.7	0.31	2.3
Domestic	26	40.6	8 / 1	64.3	682.5 / 50.0	732.5	98.2	588.4	72.7	9.67	71.7

Table C13 (cont'd).
Summary of Faunal Remains
Paddy's Alley Phase IV-2 (Ca. 1725-1730 Privy)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Skeletal Pct.	Biomass (kg)	Biomass Pct.
Identified	37	57.8	13 / 1	100.0	696.0 / 50.0	746.0	100.0	622.4	76.8	10.37	76.9
Unidentified	27	42.2						187.5	23.2	3.11	23.1
Totals	64	100.0	13 / 1	100.0	696.0 / 50.0	746.0	100.0	809.9	100.0	13.48	100.0

Table C14.
Summary of Faunal Remains
Paddy's Alley Phase IV-3 West (Ca. 1730s Occupation--West Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	49	2.6						39.5	0.4	0.58	0.5
Acipenser spp.	3	0.2	1 / 0	2.4	100.0 / 0.0	100.0	4.5	15.5	0.2	0.30	0.3
Family Gadidae	5	0.3						5.4	0.1	0.14	0.1
Gadus morhua	10	0.5	2 / 0	4.9	12.8 / 0.0	12.8	0.6	15.4	0.2	0.29	0.3
Melanogrammus aeglefinus	15	0.8	3 / 0	7.3	9.6 / 0.0	9.6	0.4	38.5	0.4	0.58	0.5
cf. *Melanogrammus aeglefinus*	1	0.1						0.3	<0.1	0.02	<0.1
Class Aves	8	0.4						4.2	<0.1	0.08	0.1
Class Aves/Mammalia III	3	0.2						1.4	<0.1	0.03	<0.1
Goose spp.	6	0.3						6.4	0.1	0.11	0.1
Anser anser	1	0.1	2 / 0	4.9	12.0 / 0.0	12.0	0.5	5.3	0.1	0.09	0.1
cf. *Anser anser*	1	0.1						1.2	<0.1	0.02	<0.1
Duck spp.	4	0.2						3.2	<0.1	0.06	0.1
Anas platyrhynchos	1	0.1	1 / 0	2.4	2.0 / 0.0	2.0	0.1	0.9	<0.1	0.02	<0.1
Aythya spp.	1	0.1	1 / 0	2.4	1.0 / 0.0	1.0	<0.1	3.2	<0.1	0.06	0.1
Family Phasianidae	2	0.1						0.8	<0.1	0.02	0.0
Meleagris gallopavo	3	0.2	1 / 0	2.4	7.5 / 0.0	7.5	0.3	5.8	0.1	0.10	0.1
Gallus gallus	22	1.2	4 / 1	12.2	10.0 / 1.0	11.0	0.5	25.2	0.3	0.39	0.3
Ectopistes migratorius	13	0.7	3 / 1	9.8	1.5 / 0.5	2.0	0.1	3.0	<0.1	0.06	<0.1
Class Mammalia	377	19.8						362.4	4.1	5.29	4.6
Class Mammalia I	231	12.1						1160.8	13.1	15.08	13.1
Class Mammalia II	537	28.2						767.6	8.7	10.39	9.0
Class Mammalia III	11	0.6						2.0	<0.1	0.05	<0.1
Rattus spp.	2	0.1	1 / 0	2.4				0.3	<0.1	0.01	<0.1
Felis domesticus	1	0.1	1 / 0	2.4				1.7	<0.1	0.04	<0.1
Order Artiodactyla I	18	0.9						39.9	0.4	0.73	0.6
Order Artiodactyla II	16	0.8						68.1	0.8	1.17	1.0
cf. Order Artiodactyla II	3	0.2						6.8	0.1	0.15	0.1
Sus scrofa	122	6.4	4 / 1	12.2	400.0 / 50.0	450.0	20.1	768.4	8.7	10.40	9.0
cf. *Sus scrofa*	5	0.3						14.3	0.2	0.29	0.3
Bos taurus	158	8.3	3 / 3	14.6	1200.0 /150.0	1350.0	60.3	3315.9	37.4	38.77	33.7

Table C14 (cont'd).
Summary of Faunal Remains
Paddy's Alley Phase IV-3 West (Ca. 1730s Occupation--West Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
cf. *Bos taurus*	6	0.3						81.2	0.9	1.38	1.2
Ovis aries	39	2.1	7 / 0	17.1	245.0 / 0.0	245.0	10.9	583.6	6.6	8.12	7.1
Ovis aries/Capra hircus	208	10.9	8 / 0	19.5	280.0 / 0.0	280.0	12.5	1222.7	13.8	15.80	13.7
cf. *Ovis aries/Capra hircus*	4	0.2						6.7	0.1	0.15	0.1
Bos taurus/Equus sp.	16	0.8						295.4	3.3	4.40	3.8
Fish	83	4.4	6 / 0	14.6	122.4 / 0.0	122.4	5.5	114.6	1.3	1.90	1.7
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	15	0.8	5 / 1	14.6	4.5 / 0.5	5.0	0.2	7.1	0.1	0.13	0.1
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	27	1.4	7 / 1	19.5	29.5 / 1.0	30.5	1.4	37.5	0.4	0.60	0.5
Domestic Mammals	558	29.3	15 / 4	46.3	1880.0 /200.0	2080.0	92.9	6288.2	70.9	79.30	68.9
Commensals	3	0.2	2 / 0	4.9				2.0	<0.1	0.05	<0.1
Wild	98	5.2	11 / 1	29.3	126.9 / 0.5	127.4	5.7	121.7	1.4	2.04	1.8
Domestic	585	30.8	22 / 5	65.9	1909.5 /201.0	2110.5	94.3	6325.7	71.3	79.90	69.4
Identified	689	36.2	35 / 6	100.0	2036.4 /201.5	2237.9	100.0	6536.5	73.7	83.67	72.7
Unidentified	1213	63.8						2336.5	26.3	31.46	27.3
Totals	1902	100.0	35 / 6	100.0	2036.4 /201.5	2237.9	100.0	8873.0	100.0	115.13	100.0

Table C15.
Summary of Faunal Remains
Paddy's Alley Phase IV-3 East (Ca. 1730s Occupation--East Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	24	0.9						15.5	0.1	0.27	0.1
Family Gadidae	3	0.1						3.2	<0.1	0.09	<0.1
Melanogrammus aeglefinus	6	0.2	3 / 0	5.3	9.6 / 0.0	9.6	0.3	17.4	0.1	0.32	0.2
cf. *Melanogrammus aeglefinus*	1	<0.1						21.4	0.1	0.38	0.2
cf. *Morone saxatilis*	1	<0.1	1 / 0	1.8	7.5 / 0.0	7.5	0.2	1.6	<0.1	0.02	<0.1
Class Aves	19	0.7						6.7	<0.1	0.12	0.1
Class Aves/Mammalia III	9	0.3						3.0	<0.1	0.06	<0.1
Goose spp.	2	0.1						3.6	<0.1	0.07	<0.1
Anser anser	3	0.1	1 / 0	1.8	6.0 / 0.0	6.0	0.2	9.4	0.1	0.16	0.1
Duck spp.	9	0.3						9.9	0.1	0.16	0.1
Anas platyrhynchos	4	0.2	3 / 0	5.3	6.0 / 0.0	6.0	0.2	6.1	<0.1	0.11	0.1
cf. *Anas platyrhynchos*	1	<0.1						0.2	<0.1	0.01	<0.1
Meleagris gallopavo	11	0.4	2 / 1	5.3	15.0 / 7.5	22.5	0.6	34.5	0.2	0.51	0.3
Gallus gallus	27	1.0	4 / 0	7.0	10.0 / 0.0	10.0	0.3	24.0	0.2	0.37	0.2
Family Columbidae	1	0.0	1 / 0	1.8	0.5 / 0.0	0.5	<0.1	0.2	0.0	0.01	<0.1
Ectopistes migratorius	13	0.5	4 / 0	7.0	2.0 / 0.0	2.0	0.1	3.9	<0.1	0.07	<0.1
Class Mammalia	367	14.2						501.1	3.1	7.08	3.7
Class Mammalia I	266	10.3						1696.9	10.6	21.22	11.0
Class Mammalia II	502	19.4						876.2	5.5	11.70	6.1
Class Mammalia III	10	0.4						1.3	<0.1	0.03	<0.1
Rattus spp.	5	0.2	2 / 0	3.5				1.4	<0.1	0.04	<0.1
Canis spp.	1	<0.1	1 / 0	1.8				2.1	<0.1	0.05	<0.1
Felis domesticus	40	1.5	2 / 2	7.0				32.6	0.2	0.61	0.3
Order Artiodactyla I	29	1.1						77.1	0.5	1.31	0.7
Order Artiodactyla II	11	0.4						47.4	0.3	0.85	0.4
Sus scrofa	148	5.7	6 / 2	14.0	600.0 / 100.0	700.0	18.7	1228.4	7.7	15.86	8.2
cf. *Sus scrofa*	9	0.3						21.4	0.1	0.41	0.2
Bos taurus	258	10.0	6 / 4	17.5	2400.0 / 200.0	2600.0	69.4	7089.6	44.3	76.84	39.8
cf. *Bos taurus*	54	2.1						862.0	5.4	11.53	6.0
Ovis aries	35	1.4	9 / 0	15.8	315.0 / 0.0	315.0	8.4	551.7	3.5	7.72	4.0

Table C15 (cont'd).
Summary of Faunal Remains
Paddy's Alley Phase IV-3 East (Ca. 1730s Occupation--East Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Capra hircus	3	0.1	2 / 0	3.5	70.0 / 0.0	70.0	1.9	55.1	0.3	0.97	0.5
cf. *Capra hircus*	3	0.1						50.7	0.3	0.90	0.5
Ovis aries/Capra hircus	230	8.9	10 / 2	21.1	350.0 / 30.0	380.0	10.1	1888.7	11.8	23.36	12.1
cf. *Ovis aries/Capra hircus*	8	0.3						29.3	0.2	0.55	0.3
Bos taurus/Equus sp.	27	1.0						690.9	4.3	9.45	4.9
Subphylum Vertebrata	452	17.4						125.9	0.8		
Fish	35	1.4	4 / 0	7.0	17.1 / 0.0	17.1	0.5	59.1	0.4	1.09	0.6
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	19	0.7	8 / 0	14.0	8.5 / 0.0	8.5	0.2	10.4	0.1	0.19	0.1
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	41	1.6	7 / 1	14.0	31.0 / 7.5	38.5	1.0	67.9	0.4	1.04	0.5
Domestic Mammals	775	29.9	22 / 8	52.6	3350.0 /330.0	3680.0	98.3	12467.8	78.0	147.60	76.4
Commensals	45	1.7	4 / 2	10.5				34.0	0.2	0.64	0.3
Wild	54	2.1	12 / 0	21.1	25.6 / 0.0	25.6	0.7	69.5	0.4	1.27	0.7
Domestic	816	31.5	29 / 9	66.7	3381.0 /337.5	3718.5	99.3	12535.7	78.4	148.64	76.9
Identified	952	36.7	46 /11	100.0	3406.6 /337.5	3744.1	100.0	12766.8	79.8	152.77	79.1
Unidentified	1640	63.3						3223.6	20.2	40.42	20.9
Totals	2592	100.0	46 /11	100.0	3406.6 /337.5	3744.1	100.0	15990.4	100.0	193.19	100.0

Table C16.
Summary of Faunal Remains
Paddy's Alley Phase V (Ca. 1730 Construction of Structure)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Skeletal Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	3	1.6						0.3	<0.1	0.01	0.1
Family Gadidae	1	0.5	1 / 0	8.3	4.8 / 0.0	4.8	0.7	0.5	<0.1	0.02	0.1
Class Aves	2	1.1						1.1	0.1	0.02	0.1
Anser anser	2	1.1	1 / 0	8.3	6.0 / 0.0	6.0	0.9	7.3	0.5	0.13	0.6
Duck spp.	1	0.5	1 / 0	8.3	2.0 / 0.0	2.0	0.3	1.3	0.1	0.03	0.1
Gallus gallus	4	2.2	2 / 0	16.7	5.0 / 0.0	5.0	0.7	5.0	0.4	0.09	0.4
Ectopistes migratorius	1	0.5	1 / 0	8.3	0.5 / 0.0	0.5	0.1	0.3	<0.1	0.01	0.0
Class Mammalia	41	22.0						19.3	1.4	0.38	1.9
Class Mammalia I	16	8.6						93.7	7.0	1.57	7.9
Class Mammalia II	29	15.6						50.4	3.7	0.90	4.5
Class Mammalia III	1	0.5						0.3	<0.1	0.01	0.0
Order Artiodactyla I	3	1.6						7.3	0.5	0.16	0.8
Order Artiodactyla II	1	0.5						1.9	0.1	0.05	0.2
Sus scrofa	6	3.2	1 / 1	16.7	100.0 / 50.0	150.0	21.8	16.6	1.2	0.33	1.7
Bos taurus	25	13.4	1 / 1	16.7	400.0 / 50.0	450.0	65.4	791.1	58.8	10.68	53.6
cf. *Bos taurus*	3	1.6						32.7	2.4	0.61	3.1
Ovis aries/Capra hircus	42	22.6	2 / 0	16.7	70.0 / 0.0	70.0	10.2	263.2	19.6	3.97	19.9
cf. *Ovis aries/Capra hircus*	2	1.1						2.8	0.2	0.07	0.3
Bos taurus/Equus sp.	2	1.1						50.8	3.8	0.90	4.5
Subphylum Vertebrata	1	0.5						0.2	<0.1		
Fish	4	2.2	1 / 0	8.3	4.8 / 0.0	4.8	0.7	0.8	0.1	0.03	0.2
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	1	0.5	1 / 0	8.3	0.5 / 0.0	0.5	0.1	0.3	<0.1	0.01	0.0
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	6	3.2	3 / 0	25.0	11.0 / 0.0	11.0	1.6	12.3	0.9	0.21	1.1
Domestic Mammals	80	43.0	4 / 2	50.0	570.0 /100.0	670.0	97.3	1157.2	86.0	16.55	83.1
Commensals	0	0.0						0.0	0.0	0.00	0.0

Table C16 (cont'd).
Summary of Faunal Remains
Paddy's Alley Phase V (Ca. 1730 Construction of Structure)

			MNI		Meat Weight (lbs)			Skeletal		Biomass	
Taxon	NISP	Pct.	Ad / IM	Pct.	Ad / IM	Total	Pct.	Weight	Pct.	(kg)	Pct.
Wild	5	2.7	2 / 0	16.7	5.3 / 0.0	5.3	0.8	1.1	0.1	0.04	0.2
Domestic	86	46.2	7 / 2	75.0	581.0 /100.0	681.0	98.9	1169.5	86.9	16.76	84.2
Identified	93	50.0	10 / 2	100.0	588.3 /100.0	688.3	100.0	1180.8	87.7	17.02	85.5
Unidentified	93	50.0						165.3	12.3	2.88	14.5
Totals	186	100.0	10 / 2	100.0	588.3 /100.0	688.3	100.0	1346.1	100.0	19.90	100.0

Table C17.
Summary of Faunal Remains
Paddy's Alley Phase VI (Ca. 1730 Use of Structure)

			MNI		Meat Weight (lbs)			Skeletal		Biomass	
Taxon	NISP	Pct.	Ad / IM	Pct.	Ad / IM	Total	Pct.	Weight	Pct.	(kg)	Pct.
Class Mammalia	14	30.4						24.7	9.9	0.47	10.2
Class Mammalia I	7	15.2						37.0	14.8	0.68	14.6
Class Mammalia II	7	15.2						15.9	6.3	0.32	6.8
Order Artiodactyla I	2	4.3						2.7	1.1	0.06	1.4
Order Artiodactyla II	2	4.3						6.2	2.5	0.14	2.9
Sus scrofa	2	4.3	1 / 0	20.0	100.0 / 0.0	100.0	17.1	13.1	5.2	0.27	5.7
Bos taurus	4	8.7	1 / 0	20.0	400.0 / 0.0	400.0	68.4	61.6	24.6	1.07	23.1
Ovis aries	2	4.3	1 / 0	20.0	35.0 / 0.0	35.0	6.0	24.2	9.7	0.46	10.0
Ovis aries/Capra hircus	5	10.9	2 / 1	60.0	70.0 / 15.0	85.0	14.5	58.5	23.4	1.02	22.1
Bos taurus/Equus sp.	1	2.2						6.6	2.6	0.14	3.1
Fish	0	0.0						0.0	0.0	0.00	0.0
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	0	0.0						0.0	0.0	0.00	0.0
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	0	0.0						0.0	0.0	0.00	0.0
Domestic Mammals	14	30.4	4 / 1	100.0	570.0 / 15.0	585.0	100.0	164.0	65.5	2.97	64.1
Commensals	0	0.0						0.0	0.0	0.00	0.0
Wild	0	0.0						0.0	0.0	0.00	0.0
Domestic	14	30.4	4 / 1	100.0	570.0 / 15.0	585.0	100.0	164.0	65.5	2.97	64.1
Identified	18	39.1	4 / 1	100.0	570.0 / 15.0	585.0	100.0	172.9	69.0	3.17	68.4
Unidentified	28	60.9						77.6	31.0	1.47	31.6
Totals	46	100.0	4 / 1	100.0	570.0 / 15.0	585.0	100.0	250.5	100.0	4.64	100.0

Table C18.
Summary of Faunal Remains
Paddy's Alley Phase VII (Ca. 1760-1790 Occupation)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Pct.
Class Osteichthyes	15	2.2						7.1	0.2	0.14	0.3
Family Gadidae	5	0.7	1 / 0	3.6	4.8 / 0.0	4.8	0.3	3.6	0.1	0.10	0.2
Class Aves	9	1.3						4.2	0.1	0.08	0.1
Class Aves/Mammalia III	2	0.3						0.6	<0.1	0.01	<0.1
Goose spp.	1	0.1						0.7	<0.1	0.02	<0.1
Anser anser	1	0.1	1 / 0	3.6	6.0 / 0.0	6.0	0.4	1.0	<0.1	0.02	<0.1
Duck spp.	2	0.3						2.4	0.1	0.05	0.1
Anas platyrhynchos	1	0.1	2 / 0	7.1	4.0 / 0.0	4.0	0.3	1.4	<0.1	0.03	0.1
Mergus merganser	1	0.1	1 / 0	3.6	2.6 / 0.0	2.6	0.2	2.6	0.1	0.05	0.1
cf. *Charadius vociferus*	1	0.1	1 / 0	3.6	1.0 / 0.0	1.0	0.1	0.3	<0.1	0.01	<0.1
Family Phasianidae	3	0.4						1.8	<0.1	0.04	0.1
Gallus gallus	15	2.2	2 / 1	10.7	5.0 / 1.0	6.0	0.4	19.3	0.5	0.30	0.6
Ectopistes migratorius	20	2.9	4 / 0	14.3	2.0 / 0.0	2.0	0.1	4.0	0.1	0.07	0.1
Class Mammalia	68	9.8						59.1	1.6	1.03	2.0
Class Mammalia I	124	17.9						528.2	14.3	7.42	14.2
Class Mammalia II	192	27.8						319.1	8.6	4.72	9.0
Class Mammalia III	1	0.1						0.1	<0.1	0.00	<0.1
Felis domesticus	1	0.1	1 / 0	3.6				3.0	0.1	0.07	0.1
Order Artiodactyla I	7	1.0						12.3	0.3	0.25	0.5
Order Artiodactyla II	2	0.3						8.4	0.2	0.18	0.3
Sus scrofa	35	5.1	2 / 1	10.7	200.0 / 50.0	250.0	17.3	345.9	9.3	5.07	9.7
Odocoileus virginianus	1	0.1	1 / 0	3.6	100.0 / 0.0	100.0	6.9	18.7	0.5	0.37	0.7
Bos taurus	58	8.4	2 / 2	14.3	800.0 /100.0	900.0	62.2	1360.1	36.7	17.39	33.2
cf. *Bos taurus*	11	1.6						123.4	3.3	2.01	3.8
Ovis aries	16	2.3	4 / 0	14.3	140.0 / 0.0	140.0	9.7	195.4	5.3	3.03	5.8
Ovis aries/Capra hircus	67	9.7	4 / 2	21.4	140.0 / 30.0	170.0	11.8	411.8	11.1	5.93	11.3
cf. *Ovis aries/Capra hircus*	3	0.4						11.1	0.3	0.23	0.4
Bos taurus/Equus sp.	10	1.4						249.9	6.7	3.78	7.2
Subphylum Vertebrata	19	2.7						9.1	0.2		

Table C18 (cont'd).
Summary of Faunal Remains
Paddy's Alley Phase VII (Ca. 1760-1790 Occupation)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Fish	20	2.9	1 / 0	3.6	4.8 / 0.0	4.8	0.3	10.7	0.3	0.24	0.5
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	23	3.3	8 / 0	28.6	9.6 / 0.0	9.6	0.7	8.3	0.2	0.16	0.3
Wild Mammals	1	0.1	1 / 0	3.6	100.0 / 0.0	100.0	6.9	18.7	0.5	0.37	0.7
Domestic Birds	16	2.3	3 / 1	14.3	11.0 / 1.0	12.0	0.8	20.3	0.5	0.32	0.6
Domestic Mammals	200	28.9	8 / 5	46.4	1140.0 /180.0	1320.0	91.3	2697.6	72.8	37.44	71.5
Commensals	1	0.1	1 / 0	3.6				3.0	0.1	0.07	0.1
Wild	44	6.4	1	35.7	114.4 / 0.0	114.4	7.9	37.7	1.0	0.77	1.5
Domestic	216	31.3	11 / 6	60.7	1151.0 /181.0	1332.0	92.1	2717.9	73.4	37.76	72.1
Identified	263	38.1	22 / 6	100.0	1265.4 /181.0	1446.4	100.0	2777.7	75.0	39.00	74.4
Unidentified	428	61.9						926.9	25.0	13.39	25.6
Totals	691	100.0	22 / 6	100.0	1265.4 /181.0	1446.4	100.0	3704.6	100.0	52.39	100.0

Table C19.
Summary of Faunal Remains
Paddy's Alley Phase VII West (Ca. 1760-1790 Occupation--West Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	2	15.4						1.2	1.2	0.03	1.9
Class Mammalia II	7	53.8						10.3	10.6	0.22	12.3
Sus scrofa	1	7.7	1 / 0	33.3	100.0 / 0.0	100.0	18.2	2.3	2.4	0.06	3.2
Bos taurus	2	15.4	1 / 1	66.7	400.0 / 50.0	450.0	81.8	78.7	81.0	1.34	76.5
Ovis aries	1	7.7	1 / 0	33.3	35.0 / 0.0	35.0	6.4	4.7	4.8	0.11	6.1
Fish	2	15.4						1.2	1.2	0.03	1.9
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	0	0.0						0.0	0.0	0.00	0.0
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	0	0.0						0.0	0.0	0.00	0.0
Domestic Mammals	4	30.8	2 / 1	100.0	500.0 / 50.0	550.0	100.0	85.7	88.2	1.50	85.8
Commensals	0	0.0						0.0	0.0	0.00	0.0
Wild	2	15.4						1.2	1.2	0.03	1.9
Domestic	4	30.8	2 / 1	100.0	500.0 / 50.0	550.0	100.0	85.7	88.2	1.50	85.8
Identified	4	30.8	2 / 1	100.0	500.0 / 50.0	550.0	100.0	85.7	88.2	1.50	85.8
Unidentified	9	69.2						11.5	11.8	0.25	14.2
Totals	13	100.0	2 / 1	100.0	500.0 / 50.0	550.0	100.0	97.2	100.0	1.75	100.0

Table C20.
Summary of Faunal Remains
Paddy's Alley Phase VII East (Ca. 1760-1790 Occupation--East Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	13	1.9						5.9	0.2	0.12	0.2
Family Gadidae	5	0.7	1 / 0	3.6	4.8 / 0.0	4.8	0.3	3.6	0.1	0.10	0.2
Class Aves	9	1.3						4.2	0.1	0.08	0.1
Class Aves/Mammalia III	2	0.3						0.6	<0.1	0.01	<0.1
Goose spp.	1	0.1						0.7	<0.1	0.02	<0.1
Anser anser	1	0.1	1 / 0	3.6	6.0 / 0.0	6.0	0.4	1.0	<0.1	0.02	<0.1
Duck spp.	2	0.3						2.4	0.1	0.05	0.1
Anas platyrhynchos	1	0.1	2 / 0	7.1	4.0 / 0.0	4.0	0.3	1.4	<0.1	0.03	0.1
Mergus merganser	1	0.1	1 / 0	3.6	2.6 / 0.0	2.6	0.2	2.6	0.1	0.05	0.1
cf. *Charadius vociferus*	1	0.1	1 / 0	3.6	1.0 / 0.0	1.0	0.1	0.3	<0.1	0.01	<0.1
Family Phasianidae	3	0.4						1.8	<0.1	0.04	0.1
Gallus gallus	15	2.2	2 / 1	10.7	5.0 / 1.0	6.0	0.4	19.3	0.5	0.30	0.6
Ectopistes migratorius	20	2.9	4 / 0	14.3	2.0 / 0.0	2.0	0.1	4.0	0.1	0.07	0.1
Class Mammalia	68	10.0						59.1	1.6	1.03	2.0
Class Mammalia I	124	18.3						528.2	14.6	7.42	14.5
Class Mammalia II	185	27.3						308.8	8.6	4.58	8.9
Class Mammalia III	1	0.1						0.1	<0.1	0.00	<0.1
Felis domesticus	1	0.1	1 / 0	3.6				3.0	0.1	0.07	0.1
Order Artiodactyla I	7	1.0						12.3	0.3	0.25	0.5
Order Artiodactyla II	2	0.3						8.4	0.2	0.18	0.3
Sus scrofa	34	5.0	2 / 1	10.7	200.0 / 50.0	250.0	17.3	343.6	9.5	5.04	9.8
Odocoileus virginianus	1	0.1	1 / 0	3.6	100.0 / 0.0	100.0	6.9	18.7	0.5	0.37	0.7
Bos taurus	56	8.3	2 / 2	14.3	800.0 /100.0	900.0	62.2	1281.4	35.5	16.48	32.2
cf. *Bos taurus*	11	1.6						123.4	3.4	2.01	3.9
Ovis aries	15	2.2	3 / 0	10.7	105.0 / 0.0	105.0	7.3	190.7	5.3	2.97	5.8
Ovis aries/Capra hircus	67	9.9	4 / 2	21.4	140.0 / 30.0	170.0	11.8	411.8	11.4	5.93	11.6
cf. *Ovis aries/Capra hircus*	3	0.4						11.1	0.3	0.23	0.4
Bos taurus/Equus sp.	10	1.5						249.9	6.9	3.78	7.4
Subphylum Vertebrata	19	2.8						9.1	0.3		

Table C20 (cont'd).
Summary of Faunal Remains
Paddy's Alley Phase VII East (Ca. 1760-1790 Occupation--East Lot)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Fish	18	2.7	1 / 0	3.6	4.8 / 0.0	4.8	0.3	9.5	0.3	0.22	0.4
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	23	3.4	8 / 0	28.6	9.6 / 0.0	9.6	0.7	8.3	0.2	0.16	0.3
Wild Mammals	1	0.1	1 / 0	3.6	100.0 / 0.0	100.0	6.9	18.7	0.5	0.37	0.7
Domestic Birds	16	2.4	3 / 1	14.3	11.0 / 1.0	12.0	0.8	20.3	0.6	0.32	0.6
Domestic Mammals	196	28.9	8 / 5	46.4	1140.0 /180.0	1320.0	91.3	2611.9	72.4	36.44	71.1
Commensals	1	0.1	1 / 0	3.6				3.0	0.1	0.07	0.1
Wild	42	6.2	1	35.7	114.4 / 0.0	114.4	7.9	36.5	1.0	0.75	1.5
Domestic	212	31.3	11 / 6	60.7	1151.0 /181.0	1332.0	92.1	2632.2	73.0	36.76	71.8
Identified	259	38.2	22 / 6	100.0	1265.4 /181.0	1446.4	100.0	2692.0	74.6	37.99	74.2
Unidentified	419	61.8						915.4	25.4	13.24	25.8
Totals	678	100.0	22 / 6	100.0	1265.4 /181.0	1446.4	100.0	3607.4	100.0	51.23	100.0

Table C21.
Summary of Faunal Remains
Paddy's Alley Phase IX (19th- Through 20th-Century Occupation)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Class Mammalia	2	16.7						1.7	0.5	0.04	0.7
Class Mammalia II	1	8.3						1.2	0.3	0.03	0.5
Class Mammalia III	1	8.3						0.2	0.1	0.01	0.1
Sus scrofa	1	8.3	1 / 0	33.3	100.0 / 0.0	100.0	18.7	21.1	5.8	0.41	7.2
Bos taurus	3	25.0	1 / 0	33.3	400.0 / 0.0	400.0	74.8	287.3	79.0	4.29	75.2
Ovis aries/Capra hircus	4	33.3	1 / 0	33.3	35.0 / 0.0	35.0	6.5	52.2	14.4	0.92	16.2
Fish	0	0.0						0.0	0.0	0.00	0.0
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	0	0.0						0.0	0.0	0.00	0.0
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	0	0.0						0.0	0.0	0.00	0.0
Domestic Mammals	8	66.7	3 / 0	100.0	535.0 / 0.0	535.0	100.0	360.6	99.1	5.62	98.6
Commensals	0	0.0						0.0	0.0	0.00	0.0
Wild	0	0.0						0.0	0.0	0.00	0.0
Domestic	8	66.7	3 / 0	100.0	535.0 / 0.0	535.0	100.0	360.6	99.1	5.62	98.6
Identified	8	66.7	3 / 0	100.0	535.0 / 0.0	535.0	100.0	360.6	99.1	5.62	98.6
Unidentified	4	33.3						3.1	0.9	0.08	1.4
Totals	12	100.0	3 / 0	100.0	535.0 / 0.0	535.0	100.0	363.7	100.0	5.70	100.0

Table C22.
Summary of Faunal Remains
Cross Street Back Lot Phase I (Initial Occupation)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	8	2.7						2.4	<0.1	0.06	0.1
Class Amphibia	10	3.4	1 / 0	5.3				0.4	<0.1	0.00	<0.1
Class Aves	3	1.0						0.3	<0.1	0.01	<0.1
Duck spp.	13	4.4						3.3	0.1	0.06	0.1
Anas spp.	2	0.7						1.6	<0.1	0.03	<0.1
Anas platyrhynchos	41	13.8	1 / 0	5.3	2.0 / 0.0	2.0	0.1	34.8	0.7	0.52	0.8
Meleagris gallopavo	2	0.7	1 / 0	5.3	7.5 / 0.0	7.5	0.5	8.2	0.2	0.14	0.2
cf. *Meleagris gallopavo*	1	0.3						2.8	0.1	0.05	0.1
Ectopistes migratorius	12	4.0	3 / 0	15.8	1.5 / 0.0	1.5	0.1	2.8	0.1	0.05	0.1
Class Mammalia	16	5.4						15.0	0.3	0.30	0.5
Class Mammalia I	13	4.4						94.2	1.9	1.57	2.5
Class Mammalia II	21	7.0						49.2	1.0	0.88	1.4
Class Mammalia III	8	2.7						3.1	0.1	0.07	0.1
Rattus spp.	2	0.7	1 / 0	5.3				0.5	<0.1	0.01	<0.1
Felis domesticus	30	10.1	2 / 0	10.5				70.8	1.5	1.22	1.9
Order Artiodactyla I	1	0.3						3.0	0.1	0.07	0.1
Order Artiodactyla II	1	0.3						4.1	0.1	0.09	0.2
Sus scrofa	9	3.0	2 / 0	10.5	200.0 / 0.0	200.0	12.4	178.1	3.7	2.79	4.5
Bos taurus	51	17.1	3 / 2	26.3	1200.0 /100.0	1300.0	80.4	3386.0	69.5	39.51	63.3
cf. *Bos taurus*	8	2.7						411.1	8.4	5.92	9.5
Ovis aries	2	0.7	1 / 0	5.3	35.0 / 0.0	35.0	2.2	81.4	1.7	1.38	2.2
Ovis aries/Capra hircus	20	6.7	3 / 0	15.8	105.0 / 0.0	105.0	6.5	337.9	6.9	4.97	8.0
cf. *Ovis aries/Capra hircus*	1	0.3						0.8	<0.1	0.02	<0.1
Bos taurus/Equus sp.	4	1.3						173.6	3.6	2.73	4.4
Subphylum Vertebrata	19	6.4						6.4	0.1		
Fish	8	2.7						2.4	0.0	0.06	0.1
Reptiles/Amphibians	10	3.4	1 / 0	5.3				0.4	<0.1	0.00	<0.1
Wild Birds	53	17.8	4 / 0	21.1	3.5 / 0.0	3.5	0.2	37.6	0.8	0.57	0.9
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0

Table C22 (cont'd).
Summary of Faunal Remains
Cross Street Back Lot Phase I (Initial Occupation)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Domestic Birds	3	1.0	1 / 0	5.3	7.5 / 0.0	7.5	0.5	11.0	0.2	0.19	0.3
Domestic Mammals	95	31.9	8 / 2	52.6	1505.0 /100.0	1605.0	99.3	4568.9	93.8	57.32	91.8
Commensals	32	10.7	3 / 0	15.8				71.3	1.5	1.23	2.0
Wild	71	23.8	5 / 0	26.3	3.5 / 0.0	3.5	0.2	40.4	0.8	0.63	1.0
Domestic	98	32.9	9 / 2	57.9	1512.5 /100.0	1612.5	99.8	4579.9	94.0	57.51	92.1
Identified	210	70.5	17 / 2	100.0	1516.0 /100.0	1616.0	100.0	4701.2	96.5	59.56	95.4
Unidentified	88	29.5						170.6	3.5	2.89	4.6
Totals	298	100.0	17 / 2	100.0	1516.0 /100.0	1616.0	100.0	4871.8	100.0	62.45	100.0

Table C23.
Summary of Faunal Remains
Cross Street Feature 4 Phase I (Ca. 1700 Initial Use of Feature 4)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM		Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Pct.	Biomass (kg)	Pct.
Homarus americanus	20	1.2							133.0	0.9	0.00	0.0
Order Lamniformes	1	0.1	1 / 0	1.9					1.2	<0.1	0.00	0.0
Class Osteichthyes	136	8.4							17.7	0.1	0.30	0.2
Family Clupeidae	38	2.3							2.0	<0.1	0.07	<0.1
cf. *Alosa pseudoharengus*	1	0.1	1 / 0	1.9	0.4 /	0.0	0.4	<0.1	0.1	<0.1	0.01	<0.1
Clupea harengus	15	0.9	2 / 0	3.8	0.8 /	0.0	0.8	<0.1	1.4	<0.1	0.05	<0.1
cf. *Clupea harengus*	1	0.1							0.1	<0.1	0.01	<0.1
Family Gadidae	11	0.7							3.1	<0.1	0.09	0.1
Gadus morhua	55	3.4	1 / 0	1.9	6.4 /	0.0	6.4	0.3	46.2	0.3	0.66	0.4
Melanogrammus aeglefinus	59	3.6	3 / 0	5.8	9.6 /	0.0	9.6	0.5	42.2	0.3	0.62	0.4
cf. *Melanogrammus aeglefinus*	1	0.1							0.9	<0.1	0.04	<0.1
Morone saxatilis	1	0.1	1 / 0	1.9	7.5 /	0.0	7.5	0.4	0.5	<0.1	0.01	<0.1
Class Aves	70	4.3							10.3	0.1	0.17	0.1
Class Aves/Mammalia III	8	0.5							1.0	<0.1	0.02	<0.1
Goose spp.	1	0.1	1 / 0	1.9	7.0 /	0.0	7.0	0.3	0.5	<0.1	0.01	<0.1
Duck spp.	4	0.2							0.6	<0.1	0.01	<0.1
Anas platyrhynchos	2	0.1	1 / 0	1.9	2.0 /	0.0	2.0	0.1	5.6	<0.1	0.10	0.1
Family Phasianidae	19	1.2							12.8	0.1	0.21	0.1
cf. Family Phasianidae	2	0.1							0.2	<0.1	0.01	<0.1
Meleagris gallopavo	2	0.1	1 / 0	1.9	7.5 /	0.0	7.5	0.4	40.3	0.3	0.59	0.4
Gallus gallus	16	1.0	2 / 2	7.7	5.0 /	2.0	7.0	0.3	17.5	0.1	0.28	0.2
Ectopistes migratorius	45	2.8	15 / 0	28.8	7.5 /	0.0	7.5	0.4	12.4	0.1	0.20	0.1
cf. *Ectopistes migratorius*	5	0.3							1.2	<0.1	0.03	<0.1
Class Mammalia	95	5.9							69.4	0.5	1.20	0.7
Class Mammalia I	58	3.6							995.2	6.9	13.13	8.0
Class Mammalia II	136	8.4							202.9	1.4	3.14	1.9
Class Mammalia III	45	2.8							12.2	0.1	0.25	0.2
Rattus spp.	5	0.3	2 / 0	3.8					0.6	<0.1	0.02	<0.1
Rattus norvegicus	6	0.4	1 / 0	1.9					1.7	<0.1	0.04	<0.1
Felis domesticus	28	1.7	1 / 0	1.9					28.0	0.2	0.53	0.3

Table C23 (cont'd).
Summary of Faunal Remains
Cross Street Feature 4 Phase I (Ca. 1700 Initial Use of Feature 4)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Pct.	Biomass (kg)	Pct.
cf. *Felis domesticus*	1	0.1						0.2	<0.1	0.01	<0.1
Order Artiodactyla II	1	0.1						0.6	<0.1	0.02	<0.1
Sus scrofa	282	17.4	3 / 1	7.7	300.0 / 50.0	350.0	17.1	1521.6	10.6	19.23	11.8
cf. *Sus scrofa*	6	0.4						12.8	0.1	0.26	0.2
Odocoileus virginianus	1	0.1	1 / 0	1.9	100.0 / 0.0	100.0	4.9	91.0	0.6	1.53	0.9
Bos taurus	147	9.1	3 / 3	11.5	1200.0 /150.0	1350.0	66.0	9518.6	66.3	100.17	61.3
cf. *Bos taurus*	4	0.2						31.4	0.2	0.59	0.4
Ovis aries	13	0.8	2 / 0	3.8	70.0 / 0.0	70.0	3.4	608.4	4.2	8.43	5.2
Ovis aries/Capra hircus	82	5.1	5 / 1	11.5	175.0 / 15.0	190.0	9.3	841.6	5.9	11.29	6.9
cf. *Ovis aries/Capra hircus*	2	0.1						6.3	<0.1	0.14	0.1
Subphylum Vertebrata	193	11.9						62.6	0.4	0.00	0.0
Fish	319	19.7	9 / 0	17.3	24.7 / 0.0	24.7	1.2	115.4	0.8	1.85	1.1
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	52	3.2	16 / 0	30.8	9.5 / 0.0	9.5	0.5	19.2	0.1	0.33	0.2
Wild Mammals	1	0.1	1 / 0	1.9	100.0 / 0.0	100.0	4.9	91.0	0.6	1.53	0.9
Domestic Birds	18	1.1	3 / 2	9.6	12.5 / 2.0	14.5	0.7	57.8	0.4	0.87	0.5
Domestic Mammals	536	33.1	11 / 5	30.8	1675.0 /215.0	1890.0	92.4	12540.7	87.4	140.10	85.7
Commensals	60	3.7	4 / 0	7.7				163.5	1.1	0.59	0.4
Wild	372	23.0	26 / 0	50.0	134.2 / 0.0	134.2	6.6	225.6	1.6	3.70	2.3
Domestic	554	34.2	14 / 7	40.4	1687.5 /217.0	1904.5	93.1	12598.5	87.8	140.97	86.3
Identified	885	54.7	45 / 7	100.0	1828.7 /217.0	2045.7	100.0	12985.6	90.5	145.23	88.9
Unidentified	733	45.3						1370.3	9.5	18.18	11.1
Total	1618	100.0	45 / 7	100.0	1828.7 /217.0	2045.7	100.0	14355.9	100.0	163.41	100.0

Table C24.
Summary of Faunal Remains
Cross Street Feature 4 Phase I-2 (Ca. 1700 Earliest Fecal Deposition)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Homarus americanus	1	0.2						8.9	0.9	0.00	0.0
Order Lamniformes	1	0.2	1 / 0	10.0				1.2	0.1	0.00	0.0
Class Osteichthyes	65	15.0						3.6	0.4	0.08	0.6
Family Clupeidae	3	0.7						0.2	<0.1	0.01	0.1
Clupea harengus	3	0.7	2 / 0	20.0	0.8 / 0.0	0.8	0.1	0.3	<0.1	0.02	0.1
Gadus morhua	31	7.1	1 / 0	10.0	6.4 / 0.0	6.4	1.2	13.8	1.4	0.27	1.9
Class Aves	6	1.4						0.7	0.1	0.02	0.1
Family Phasianidae	1	0.2						0.8	0.1	0.02	0.1
Gallus gallus	1	0.2	1 / 0	10.0	2.5 / 0.0	2.5	0.5	0.2	<0.1	0.01	<0.1
Ectopistes migratorius	3	0.7	1 / 0	10.0	0.5 / 0.0	0.5	0.1	0.4	<0.1	0.01	0.1
Class Mammalia	22	5.1						7.7	0.8	0.17	1.2
Class Mammalia I	4	0.9						26.3	2.7	0.50	3.5
Class Mammalia II	24	5.5						17.9	1.9	0.35	2.5
Class Mammalia III	5	1.2						1.2	0.1	0.03	0.2
Sus scrofa	201	46.3	0 / 1	10.0	0.0 / 50.0	50.0	9.2	626.4	64.8	8.65	61.4
cf. *Sus scrofa*	3	0.7						3.2	0.3	0.08	0.5
Bos taurus	10	2.3	1 / 1	20.0	400.0 / 50.0	450.0	82.5	211.7	21.9	3.26	23.1
Ovis aries/Capra hircus	6	1.4	1 / 0	10.0	35.0 / 0.0	35.0	6.4	34.2	3.5	0.63	4.5
Subphylum Vertebrata	44	10.1						8.2	0.8	0.00	0.0
Fish	103	23.7	4 / 0	40.0	7.2 / 0.0	7.2	1.3	19.1	2.0	0.38	2.7
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	3	0.7	1 / 0	10.0	0.5 / 0.0	0.5	0.1	0.4	<0.1	0.01	0.1
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	1	0.2	1 / 0	10.0	2.5 / 0.0	2.5	0.5	0.2	<0.1	0.01	<0.1
Domestic Mammals	220	50.7	2 / 2	40.0	435.0 /100.0	535.0	98.1	875.5	90.5	12.62	89.5
Commensals	1	0.2						8.9	0.9	0.00	0.0
Wild	106	24.4	5 / 0	50.0	7.7 / 0.0	7.7	1.4	19.5	2.0	0.39	2.8
Domestic	221	50.9	3 / 2	50.0	437.5 /100.0	537.5	98.6	875.7	90.6	12.62	89.6

Table C24 (cont'd).
Summary of Faunal Remains
Cross Street Feature 4 Phase I-2 (Ca. 1700 Earliest Fecal Deposition)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Identified	264	60.8	8 / 2	100.0	445.2 /100.0	545.2	100.0	901.3	93.2	12.95	91.9
Unidentified	170	39.2						65.6	6.8	1.15	8.1
Total	434	100.0	8 / 2	100.0	445.2 /100.0	545.2	100.0	966.9	100.0	14.10	100.0

Table C25.
Summary of Faunal Remains
Cross Street Feature 4 Phase I-3 (Ca. 1700 Fill Cap)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	2	5.3						0.2	1.2	0.01	1.9
Family Clupeidae	2	5.3						0.1	0.6	0.01	1.7
Clupea harengus	1	2.6	1 / 0	20.0	0.4 / 0.0	0.4	0.8	0.1	0.6	0.01	1.7
cf. *Clupea harengus*	1	2.6						0.1	0.6	0.01	1.7
Gadus morhua	1	2.6	1 / 0	20.0	6.4 / 0.0	6.4	13.3	0.6	3.5	0.03	6.6
Melanogrammus aeglefinus	4	10.5	2 / 0	40.0	6.4 / 0.0	6.4	13.3	0.8	4.7	0.03	8.0
Class Aves	4	10.5						0.8	4.7	0.02	4.1
Class Mammalia	4	10.5						2.6	15.2	0.06	15.0
Class Mammalia I	1	2.6						4.1	24.0	0.09	22.8
Class Mammalia II	7	18.4						6.3	36.8	0.14	33.5
Ovis aries/Capra hircus	1	2.6	1 / 0	20.0	35.0 / 0.0	35.0	72.6	0.4	2.3	0.01	2.9
Subphylum Vertebrata	10	26.3						1.0	5.8	0.00	0.0
Fish	11	28.9	4 / 0	80.0	13.2 / 0.0	13.2	27.4	1.9	11.1	0.09	21.6
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	0	0.0						0.0	0.0	0.00	0.0
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	0	0.0						0.0	0.0	0.00	0.0
Domestic Mammals	1	2.6	1 / 0	20.0	35.0 / 0.0	35.0	72.6	0.4	2.3	0.01	2.9
Commensals	0	0.0						0.0	0.0	0.00	0.0
Wild	11	28.9	4 / 0	80.0	13.2 / 0.0	13.2	27.4	1.9	11.1	0.09	21.6
Domestic	1	2.6	1 / 0	20.0	35.0 / 0.0	35.0	72.6	0.4	2.3	0.01	2.9
Identified	10	26.3	5 / 0	100.0	48.2 / 0.0	48.2	100.0	2.1	12.3	0.09	22.6
Unidentified	28	73.7						15.0	87.7	0.32	77.4
Total	38	100.0	5 / 0	100.0	48.2 / 0.0	48.2	100.0	17.1	100.0	0.41	100.0

Table C26.
Summary of Faunal Remains
Cross Street Feature 4 Phase I-5 (Ca. 1700 Fecal Deposition)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Homarus americanus	16	2.9						122.4	1.9	0.00	0.0
Class Osteichthyes	22	3.9						5.5	0.1	0.12	0.1
Family Clupeidae	32	5.7						1.6	<0.1	0.06	0.1
cf. *Alosa pseudoharengus*	1	0.2	1 / 0	4.2	0.4 / 0.0	0.4	<0.1	0.1	<0.1	0.01	0.0
Clupea harengus	11	2.0	2 / 0	8.3	0.8 / 0.0	0.8	0.1	1.0	<0.1	0.04	<0.1
Family Gadidae	1	0.2						0.9	<0.1	0.04	<0.1
Gadus morhua	16	2.9	1 / 0	4.2	6.4 / 0.0	6.4	0.4	24.3	0.4	0.41	0.5
Melanogrammus aeglefinus	4	0.7	2 / 0	8.3	6.4 / 0.0	6.4	0.4	7.0	0.1	0.16	0.2
Class Aves	25	4.5						3.8	0.1	0.07	0.1
Class Aves/Mammalia III	5	0.9						0.3	<0.1	0.01	<0.1
Family Phasianidae	17	3.0						11.8	0.2	0.19	0.2
Meleagris gallopavo	1	0.2	1 / 0	4.2	7.5 / 0.0	7.5	0.5	7.2	0.1	0.12	0.2
Gallus gallus	9	1.6	2 / 2	16.7	5.0 / 2.0	7.0	0.4	9.3	0.1	0.16	0.2
Ectopistes migratorius	6	1.1	3 / 0	12.5	1.5 / 0.0	1.5	0.1	1.7	<0.1	0.03	<0.1
Class Mammalia	44	7.9						23.8	0.4	0.46	0.6
Class Mammalia I	29	5.2						487.6	7.4	6.91	8.8
Class Mammalia II	53	9.5						85.7	1.3	1.44	1.8
Class Mammalia III	8	1.4						1.2	<0.1	0.03	<0.1
Rattus spp.	1	0.2						0.1	<0.1	0.00	<0.1
Rattus norvegicus	3	0.5	1 / 0	4.2				0.9	<0.1	0.02	<0.1
Order Artiodactyla II	1	0.2						0.6	<0.1	0.02	<0.1
Sus scrofa	55	9.8	2 / 1	12.5	200.0 / 50.0	250.0	15.6	648.2	9.8	8.92	11.4
cf. *Sus scrofa*	2	0.4						0.9	<0.1	0.02	<0.1
Bos taurus	66	11.8	3 / 1	16.7	1200.0 / 50.0	1250.0	78.1	4750.8	72.0	53.59	68.2
cf. *Bos taurus*	3	0.5						27.7	0.4	0.52	0.7
Ovis aries	1	0.2	1 / 0	4.2	35.0 / 0.0	35.0	2.2	51.3	0.8	0.91	1.2
Ovis aries/Capra hircus	39	7.0	2 / 0	8.3	70.0 / 0.0	70.0	4.4	282.2	4.3	4.22	5.4
Ovis aries/Capra hircus	2	0.4						6.3	0.1	0.14	0.2
Subphylum Vertebrata	86	15.4						33.4	0.5	0.00	0.0

Table C26 (cont'd).
Summary of Faunal Remains
Cross Street Feature 4 Phase I-5 (Ca. 1700 Fecal Deposition)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Fish	87	15.6	6 / 0	25.0	14.0 / 0.0	14.0	0.9	40.4	0.6	0.83	1.1
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	6	1.1	3 / 0	12.5	1.5 / 0.0	1.5	0.1	1.7	<0.1	0.03	<0.1
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	10	1.8	3 / 2	20.8	12.5 / 2.0	14.5	0.9	16.5	0.3	0.28	0.4
Domestic Mammals	168	30.1	7 / 2	37.5	1470.0 /100.0	1570.0	98.1	5767.4	87.4	68.33	86.9
Commensals	20	3.6	1 / 0	4.2				123.4	1.9	0.03	<0.1
Wild	93	16.6	9 / 0	37.5	15.5 / 0.0	15.5	1.0	42.1	0.6	0.86	1.1
Domestic	178	31.8	10 / 4	58.3	1482.5 /102.0	1584.5	99.0	5783.9	87.7	68.61	87.3
Identified	292	52.2	20 / 4	100.0	1498.0 /102.0	1600.0	100.0	5956.6	90.3	69.60	88.5
Unidentified	267	47.8						641.0	9.7	9.02	11.5
Total	559	100.0	20 / 4	100.0	1498.0 /102.0	1600.0	100.0	6597.6	100.0	78.62	100.0

Table C36 (cont'd).
Summary of Faunal Remains
Cross Street Back Lot Phase IV (Late 18th- Through 19th-C. Occupation)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Skeletal Pct.	Biomass (kg)	Biomass Pct.
Wild	4	3.9	2 / 0	16.7	2.5 / 0.0	2.5	0.4	0.9	0.1	0.03	0.3
Domestic	30	29.1	7 / 1	66.7	586.0 / 50.0	636.0	98.1	502.3	82.4	7.90	80.4
Identified	35	34.0	11 / 1	100.0	598.5 / 50.0	648.5	100.0	507.7	83.3	8.04	81.7
Unidentified	68	66.0						101.9	16.7	1.79	18.3
Totals	103	100.0	11 / 1	100.0	598.5 / 50.0	648.5	100.0	609.6	100.0	9.83	100.0

Table C37.
Summary of Faunal Remains
Cross Street Back Lot Phase V (Ca. 1750-1790 Occupation)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Skeletal Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	21	4.1						18.6	0.4	0.32	0.5
Family Gadidae	7	1.4						9.3	0.2	0.20	0.3
Gadus morhua	5	1.0	2 / 0	8.0	12.8 / 0.0	12.8	1.0	8.4	0.2	0.19	0.3
Melanogrammus aeglefinus	4	0.8	1 / 0	4.0	3.2 / 0.0	3.2	0.3	4.5	0.1	0.12	0.2
Class Aves	10	1.9						4.7	0.1	0.08	0.1
Goose spp.	2	0.4						7.7	0.2	0.13	0.2
Anser anser	1	0.2	1 / 0	4.0	6.0 / 0.0	6.0	0.5	1.4	0.0	0.03	<0.1
Duck spp.	2	0.4						0.6	<0.1	0.01	<0.1
Anas platyrhynchos	1	0.2	1 / 0	4.0	2.0 / 0.0	2.0	0.2	2.2	<0.1	0.04	0.1
Meleagris gallopavo	17	3.3	4 / 0	16.0	30.0 / 0.0	30.0	2.4	66.4	1.5	0.93	1.5
Gallus gallus	14	2.7	3 / 0	12.0	7.5 / 0.0	7.5	0.6	18.9	0.4	0.30	0.5
Ectopistes migratorius	5	1.0	1 / 0	4.0	0.5 / 0.0	0.5	<0.1	1.4	<0.1	0.03	<0.1
Class Mammalia	43	8.4						50.5	1.1	0.90	1.5
Class Mammalia I	38	7.4						283.1	6.3	4.23	7.0
Class Mammalia II	121	23.6						271.4	6.0	4.08	6.7
Class Mammalia III	1	0.2						0.2	<0.1	0.01	<0.1
Rattus spp.	1	0.2						0.3	<0.1	0.01	<0.1
Rattus norvegicus	5	1.0	2 / 0	8.0				2.3	0.1	0.06	0.1
Order Artiodactyla I	19	3.7						123.0	2.7	2.00	3.3
Sus scrofa	21	4.1	1 / 1	8.0	100.0 / 50.0	150.0	12.0	256.5	5.7	3.87	6.4
cf. *Sus scrofa*	4	0.8						20.4	0.5	0.40	0.7
Bos taurus	63	12.3	2 / 2	16.0	800.0 /100.0	900.0	71.9	2441.4	54.2	29.44	48.5
cf. *Bos taurus*	7	1.4						122.8	2.7	2.00	3.3
Ovis aries	14	2.7	4 / 0	16.0	140.0 / 0.0	140.0	11.2	251.7	5.6	3.81	6.3
cf. *Capra hircus*	1	0.2	1 / 0	4.0	35.0 / 0.0	35.0	2.8	8.4	0.2	0.18	0.3
Ovis aries/Capra hircus	48	9.4	4 / 0	16.0	140.0 / 0.0	140.0	11.2	429.2	9.5	6.16	10.1
cf. *Ovis aries/Capra hircus*	3	0.6						16.1	0.4	0.32	0.5
Bos taurus/Equus sp.	3	0.6						48.5	1.1	0.87	1.4
Subphylum Vertebrata	32	6.2						35.6	0.8		

Table C37 (cont'd).
Summary of Faunal Remains
Cross Street Back Lot Phase V (Ca. 1750-1790 Occupation)

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Skeletal Pct.	Biomass (kg)	Biomass Pct.
Fish	37	7.2	3 / 0	12.0	16.0 / 0.0	16.0	1.3	40.8	0.9	0.82	1.4
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	6	1.2	2 / 0	8.0	2.5 / 0.0	2.5	0.2	3.6	0.1	0.07	0.1
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	32	6.2	8 / 0	32.0	43.5 / 0.0	43.5	3.5	86.7	1.9	1.25	2.1
Domestic Mammals	164	32.0	7 / 3	40.0	1040.0 /150.0	1190.0	95.0	3595.0	79.8	47.04	77.5
Commensals	6	1.2	2 / 0	8.0				2.6	0.1	0.07	0.1
Wild	43	8.4	5 / 0	20.0	18.5 / 0.0	18.5	1.5	44.4	1.0	0.89	1.5
Domestic	196	38.2	15 / 3	72.0	1083.5 /150.0	1233.5	98.5	3681.7	81.7	48.29	79.6
Identified	247	48.1	22 / 3	100.0	1102.0 /150.0	1252.0	100.0	3841.4	85.3	51.08	84.2
Unidentified	266	51.9						664.1	14.7	9.61	15.8
Totals	513	100.0	22 / 3	100.0	1102.0 /150.0	1252.0	100.0	4505.5	100.0	60.69	100.0

Table C38.
Summary of Faunal Remains
Mill Pond Phase I

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Skeletal Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	6	0.8						2.7	0.1	0.07	0.1
Gadus morhua	1	0.1	1 / 0	4.0	6.4 / 0.0	6.4	0.3	1.4	<0.1	0.05	0.1
Class Aves	23	3.0						8.4	0.2	0.14	0.2
cf. *Branta bernicula*	1	0.1	1 / 0	4.0	3.0 / 0.0	3.0	0.1	1.6	<0.1	0.03	0.1
Meleagris gallopavo	1	0.1	1 / 0	4.0	7.5 / 0.0	7.5	0.4	0.9	<0.1	0.02	<0.1
Gallus gallus	9	1.2	2 / 0	8.0	5.0 / 0.0	5.0	0.2	11.4	0.3	0.19	0.3
cf. *Gallus gallus*	1	0.1						0.5	<0.1	0.01	<0.1
cf. Family Columbidae	2	0.3						0.3	<0.1	0.01	<0.1
Ectopistes migratorius	1	0.1	2 / 0	8.0	1.0 / 0.0	1.0	0.0	0.3	<0.1	0.01	<0.1
cf. *Ectopistes migratorius*	2	0.3						0.2	<0.1	0.01	<0.1
Class Mammalia	7	0.9						3.0	0.1	0.07	0.1
Class Mammalia I	191	24.6						1184.8	26.1	15.36	25.1
Class Mammalia II	336	43.3						501.1	11.0	7.08	11.6
Class Mammalia III	1	0.1						0.4	<0.1	0.01	<0.1
Canis familiaris	1	0.1	1 / 0	4.0				20.1	0.4	0.39	0.6
Sus scrofa	59	7.6	4 / 2	24.0	400.0 /100.0	500.0	24.8	551.2	12.1	7.71	12.6
cf. *Sus scrofa*	3	0.4						14.2	0.3	0.29	0.5
Bos taurus	61	7.9	3 / 2	20.0	1200.0 /100.0	1300.0	64.6	1533.8	33.7	19.37	31.7
Ovis aries	10	1.3	3 / 0	12.0	105.0 / 0.0	105.0	5.2	144.4	3.2	2.31	3.8
cf. *Ovis aries*	1	0.1						18.1	0.4	0.36	0.6
Ovis aries/Capra hircus	58	7.5	5 / 1	24.0	175.0 / 15.0	190.0	9.4	543.3	12.0	7.61	12.4
cf. *Ovis aries/Capra hircus*	1	0.1						3.2	0.1	0.08	0.1
Fish	7	0.9	1 / 0	4.0	6.4 / 0.0	6.4	0.3	4.1	0.1	0.12	0.2
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	6	0.8	3 / 0	12.0	4.0 / 0.0	4.0	0.2	2.4	0.1	0.05	0.1
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	11	1.4	3 / 0	12.0	12.5 / 0.0	12.5	0.6	12.8	0.3	0.22	0.4
Domestic Mammals	193	24.9	12 / 5	68.0	1775.0 /215.0	1990.0	98.9	2808.2	61.8	37.73	61.7
Commensals	1	0.1	1 / 0	4.0				20.1	0.4	0.39	0.6

Table C38 (cont'd).
Summary of Faunal Remains
Mill Pond Phase I

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Skeletal Pct.	Biomass (kg)	Biomass Pct.
Wild	13	1.7	4 / 0	16.0	10.4 / 0.0	10.4	0.5	6.5	0.1	0.17	0.3
Domestic	204	26.3	15 / 5	80.0	1787.5 / 215.0	2002.5	99.5	2821.0	62.1	37.94	62.0
Identified	212	27.3	20 / 5	100.0	1797.9 / 215.0	2012.9	100.0	2844.9	62.6	38.43	62.8
Unidentified	564	72.7						1700.4	37.4	22.73	37.2
Totals	776	100.0	20 / 5	100.0	1797.9 / 215.0	2012.9	100.0	4545.3	100.0	61.16	100.0

Table C39.
Summary of Faunal Remains
Mill Pond Phase III

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Class Aves	2	1.4						0.5	<0.1	0.01	<0.1
Duck spp.	1	0.7	1 / 0	7.1	2.0 / 0.0	2.0	0.2	0.9	<0.1	0.02	0.1
Family Phasianidae	3	2.1						2.8	0.1	0.05	0.2
Meleagris gallopavo	1	0.7	1 / 0	7.1	7.5 / 0.0	7.5	0.6	8.3	0.3	0.14	0.4
cf. *Gallus gallus*	2	1.4	2 / 0	14.3	5.0 / 0.0	5.0	0.4	3.8	0.2	0.07	0.2
Ectopistes migratorius	1	0.7	1 / 0	7.1	0.5 / 0.0	0.5	0.0	0.3	<0.1	0.01	<0.1
Class Mammalia I	21	14.5						270.1	11.3	4.06	12.6
Class Mammalia II	48	33.1						83.0	3.5	1.40	4.4
Order Artiodactyla II	1	0.7						4.1	0.2	0.09	0.3
Sus scrofa	9	6.2	2 / 1	21.4	200.0 / 50.0	250.0	20.5	108.6	4.6	1.79	5.6
cf. *Sus scrofa*	1	0.7						4.2	0.2	0.10	0.3
Bos taurus	29	20.0	2 / 1	21.4	800.0 / 50.0	850.0	69.7	1663.1	69.7	20.84	64.7
Ovis aries/Capra hircus	25	17.2	3 / 0	21.4	105.0 / 0.0	105.0	8.6	235.6	9.9	3.59	11.2
cf. *Ovis aries/Capra hircus*	1	0.7						0.6	<0.1	0.02	0.1
Fish	0	0.0						0.0	0.0	0.00	0.0
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	1	0.7	1 / 0	7.1	0.5 / 0.0	0.5	0.0	0.3	<0.1	0.01	<0.1
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	3	2.1	3 / 0	21.4	12.5 / 0.0	12.5	1.0	12.1	0.5	0.21	0.6
Domestic Mammals	65	44.8	7 / 2	64.3	1105.0 / 100.0	1205.0	98.8	2012.1	84.3	26.33	81.8
Commensals	0	0.0						0.0	0.0	0.00	0.0
Wild	1	0.7	1 / 0	7.1	0.5 / 0.0	0.5	0.0	0.3	<0.1	0.01	<0.1
Domestic	68	46.9	10 / 2	85.7	1117.5 / 100.0	1217.5	99.8	2024.2	84.8	26.54	82.5
Identified	74	51.0	12 / 2	100.0	1120.0 / 100.0	1220.0	100.0	2032.3	85.2	26.71	83.0
Unidentified	71	49.0						353.6	14.8	5.47	17.0
Totals	145	100.0	12 / 2	100.0	1120.0 / 100.0	1220.0	100.0	2385.9	100.0	32.18	100.0

Table C40.
Summary of Faunal Remains
Mill Pond Phase IIIa

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Class Osteichthyes	126	8.7						15.4	0.1	0.27	0.2
Gadus morhua	3	0.2	1 / 0	2.3	6.4 / 0.0	6.4	0.3	1.1	<0.1	0.04	<0.1
Melanogrammus aeglefinus	8	0.6	2 / 0	4.5	6.4 / 0.0	6.4	0.3	8.5	0.1	0.19	0.1
Class Aves	221	15.3						133.0	1.3	1.75	1.3
Class Aves/Mammalia III	1	0.1						0.6	<0.1	0.01	<0.1
Goose spp.	6	0.4						19.4	0.2	0.30	0.2
cf. Goose spp.	2	0.1						3.1	<0.1	0.06	<0.1
Anser anser	3	0.2	2 / 0	4.5	12.0 / 0.0	12.0	0.5	11.3	0.1	0.19	0.1
Duck spp.	2	0.1	1 / 0	2.3	2.0 / 0.0	2.0	0.1	4.3	<0.1	0.08	0.1
Family Phasianidae	5	0.3						6.6	0.1	0.11	0.1
Meleagris gallopavo	51	3.5	7 / 0	15.9	52.5 / 0.0	52.5	2.3	243.8	2.3	3.04	2.3
cf. *Meleagris gallopavo*	2	0.1						1.6	<0.1	0.03	<0.1
Gallus gallus	25	1.7	5 / 0	11.4	12.5 / 0.0	12.5	0.5	39.4	0.4	0.58	0.4
cf. *Gallus gallus*	5	0.3						3.6	<0.1	0.07	0.1
Family Columbidae	6	0.4						1.2	<0.1	0.02	<0.1
Ectopistes migratorius	10	0.7	4 / 0	9.1	2.0 / 0.0	2.0	0.1	3.8	<0.1	0.07	0.1
Class Mammalia	6	0.4						3.5	<0.1	0.08	0.1
Class Mammalia I	348	24.0						4179.4	39.8	47.75	36.7
Class Mammalia II	314	21.7						872.5	8.3	11.66	9.0
Class Mammalia III	4	0.3						66.1	0.6	1.14	0.9
Order Artiodactyla I	2	0.1						7.7	0.1	0.17	0.1
Order Artiodactyla II	6	0.4						39.6	0.4	0.72	0.6
Sus scrofa	113	7.8	3 / 3	13.6	300.0 /150.0	450.0	19.5	1226.4	11.7	15.84	12.2
cf. *Sus scrofa*	1	0.1						13.4	0.1	0.27	0.2
Odocoileus virginianus	1	0.1	1 / 0	2.3	100.0 / 0.0	100.0	4.3	10.0	0.1	0.21	0.2
Bos taurus	105	7.3	3 / 4	15.9	1200.0 /200.0	1400.0	60.8	2549.8	24.3	30.61	23.5
cf. *Bos taurus*	2	0.1						80.6	0.8	1.37	1.1
Ovis aries	14	1.0	4 / 0	9.1	140.0 / 0.0	140.0	6.1	247.0	2.4	3.75	2.9
Ovis aries/Capra hircus	54	3.7	7 / 1	18.2	245.0 / 15.0	260.0	11.3	695.7	6.6	9.51	7.3
cf. *Ovis aries/Capra hircus*	2	0.1						9.2	0.1	0.19	0.1

Table C40 (cont'd).
Summary of Faunal Remains
Mill Pond Phase IIIa

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Fish	137	9.5	3 / 0	6.8	12.8 / 0.0	12.8	0.6	25.0	0.2	0.50	0.4
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	16	1.1	4 / 0	9.1	2.0 / 0.0	2.0	0.1	5.0	<0.1	0.09	0.1
Wild Mammals	1	0.1	1 / 0	2.3	100.0 / 0.0	100.0	4.3	10.0	0.1	0.21	0.2
Domestic Birds	86	5.9	14 / 0	31.8	77.0 / 0.0	77.0	3.3	299.7	2.9	3.89	3.0
Domestic Mammals	291	20.1	13 / 8	47.7	1745.0 /365.0	2110.0	91.6	4822.1	45.9	61.54	47.3
Commensals	0	0.0						0.0	0.0	0.00	0.0
Wild	154	10.6	8 / 0	18.2	114.8 / 0.0	114.8	5.0	40.0	0.4	0.80	0.6
Domestic	377	26.0	27 / 8	79.5	1822.0 /365.0	2187.0	94.9	5121.8	48.8	65.43	50.3
Identified	429	29.6	36 / 8	100.0	1938.8 /365.0	2303.8	100.0	5227.7	49.8	67.42	51.8
Unidentified	1019	70.4						5269.9	50.2	62.66	48.2
Totals	1448	100.0	36 / 8	100.0	1938.8 /365.0	2303.8	100.0	10497.6	100.0	130.07	100.0

Table C41.
Summary of Faunal Remains
Mill Pond Phase IV

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Gadus morhua	1	0.3	1 / 0	4.2	6.4 / 0.0	6.4	0.4	2.2	<0.1	0.07	0.1
Class Aves	14	3.5						16.8	0.3	0.27	0.4
Goose spp.	2	0.5						7.3	0.1	0.13	0.2
Anser anser	2	0.5	1 / 0	4.2	6.0 / 0.0	6.0	0.3	10.3	0.2	0.17	0.2
Duck spp.	2	0.5	2 / 0	8.3	4.0 / 0.0	4.0	0.2	2.6	<0.1	0.05	0.1
Family Phasianidae	3	0.8						2.9	0.1	0.05	0.1
Meleagris gallopavo	6	1.5	1 / 0	4.2	7.5 / 0.0	7.5	0.4	21.0	0.4	0.33	0.4
Gallus gallus	10	2.5	2 / 1	12.5	5.0 / 1.0	6.0	0.3	17.9	0.3	0.28	0.4
cf. *Gallus gallus*	1	0.3						2.3	<0.1	0.04	0.1
cf. *Ectopistes migratorius*	1	0.3	1 / 0	4.2	0.5 / 0.0	0.5	0.0	0.3	<0.1	0.01	<0.1
Class Mammalia I	124	31.3						1095.2	19.0	14.31	19.6
Class Mammalia II	81	20.5						201.7	3.5	3.12	4.3
Rattus norvegicus	2	0.5	1 / 0	4.2				1.0	<0.1	0.03	<0.1
Felis domesticus	1	0.3	0 / 1	4.2				0.6	<0.1	0.02	<0.1
Sus scrofa	25	6.3	2 / 0	8.3	200.0 / 0.0	200.0	11.5	303.1	5.3	4.50	6.2
Bos taurus	69	17.4	3 / 3	25.0	1200.0 /150.0	1350.0	77.8	3404.9	59.1	39.71	54.3
cf. *Bos taurus*	1	0.3						23.5	0.4	0.45	0.6
Ovis aries	16	4.0	2 / 1	12.5	70.0 / 15.0	85.0	4.9	349.9	6.1	5.12	7.0
cf. *Ovis aries*	1	0.3						14.8	0.3	0.30	0.4
Ovis aries/Capra hircus	34	8.6	4 / 1	20.8	140.0 / 15.0	155.0	8.9	280.5	4.9	4.20	5.7
Fish	1	0.3	1 / 0	4.2	6.4 / 0.0	6.4	0.4	2.2	<0.1	0.07	0.1
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	1	0.3	1 / 0	4.2	0.5 / 0.0	0.5	0.0	0.3	<0.1	0.01	<0.1
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	19	4.8	4 / 1	20.8	18.5 / 1.0	19.5	1.1	51.5	0.9	0.82	1.1
Domestic Mammals	146	36.9	9 / 4	54.2	1540.0 /165.0	1705.0	98.2	4376.7	76.0	54.28	74.2
Commensals	3	0.8	1 / 1	8.3				1.6	0.0	0.04	0.1

Table C41 (cont'd).
Summary of Faunal Remains
Mill Pond Phase IV

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Pct.	Biomass (kg)	Biomass Pct.
Wild	2	0.5	2 / 0	8.3	6.9 / 0.0	6.9	0.4	2.5	0.0	0.08	0.1
Domestic	165	41.7	13 / 5	75.0	1558.5 /166.0	1724.5	99.4	4428.2	76.9	55.10	75.3
Identified	177	44.7	18 / 6	100.0	1569.4 /166.0	1735.4	100.0	4445.1	77.2	55.45	75.8
Unidentified	219	55.3						1313.7	22.8	17.69	24.2
Totals	396	100.0	18 / 6	100.0	1569.4 /166.0	1735.4	100.0	5758.8	100.0	73.15	100.0

Table C42.
Summary of Faunal Remains
Mill Pond Phase V

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight Total	Meat Weight Pct.	Skeletal Weight	Pct.	Biomass (kg)	Pct.
Class Osteichthyes	10	0.9						5.2	0.1	0.11	0.1
Melanogrammus aeglefinus	5	0.4	1 / 0	3.3	3.2 / 0.0	3.2	0.2	2.2	<0.1	0.07	0.1
cf. *Melanogrammus aeglefinus*	1	0.1						0.3	<0.1	0.02	<0.1
Class Aves	70	6.0						45.8	0.6	0.66	0.6
Goose spp.	5	0.4	1 / 0	3.3	7.0 / 0.0	7.0	0.3	7.1	0.1	0.12	0.1
Duck spp.	2	0.2	1 / 0	3.3	2.0 / 0.0	2.0	0.1	2.3	<0.1	0.04	<0.1
Family Phasianidae	8	0.7						6.3	0.1	0.11	0.1
Meleagris gallopavo	28	2.4	4 / 0	13.3	30.0 / 0.0	30.0	1.5	92.1	1.1	1.25	1.2
cf. *Meleagris gallopavo*	1	0.1						1.9	<0.1	0.04	<0.1
Gallus gallus	11	0.9	2 / 1	10.0	5.0 / 1.0	6.0	0.3	22.7	0.3	0.35	0.3
cf. Family Columbidae	4	0.3						0.7	<0.1	0.02	<0.1
Ectopistes migratorius	2	0.2	2 / 0	6.7	1.0 / 0.0	1.0	<0.1	0.5	<0.1	0.01	<0.1
Class Mammalia	5	0.4						5.5	0.1	0.12	0.1
Class Mammalia I	312	26.7						1740.0	21.0	21.70	20.5
Class Mammalia II	359	30.7						741.4	8.9	10.07	9.5
Rattus spp.	2	0.2	1 / 0	3.3				0.6	<0.1	0.02	<0.1
Order Artiodactyla I	1	0.1						1.6	<0.1	0.04	<0.1
Order Artiodactyla II	20	1.7						136.4	1.6	2.19	2.1
Sus scrofa	85	7.3	4 / 1	16.7	400.0 / 50.0	450.0	22.2	809.9	9.8	10.90	10.3
cf. *Sus scrofa*	4	0.3						14.7	0.2	0.30	0.3
Bos taurus	100	8.6	3 / 2	16.7	1200.0 /100.0	1300.0	64.2	3344.5	40.4	39.08	36.9
cf. *Bos taurus*	3	0.3						55.7	0.7	0.98	0.9
Ovis aries	33	2.8	5 / 0	16.7	175.0 / 0.0	175.0	8.6	465.4	5.6	6.62	6.3
Ovis aries/Capra hircus	89	7.6	6 / 1	23.3	210.0 / 15.0	225.0	11.1	681.0	8.2	9.33	8.8
cf. *Ovis aries/Capra hircus*	3	0.3						11.1	0.1	0.23	0.2
Bos taurus/Equus sp.	5	0.4						92.7	1.1	1.55	1.5
Fish	16	1.4	1 / 0	3.3	3.2 / 0.0	3.2	0.2	7.7	0.1	0.20	0.2
Reptiles/Amphibians	0	0.0						0.0	0.0	0.00	0.0
Wild Birds	6	0.5	2 / 0	6.7	1.0 / 0.0	1.0	0.0	1.2	<0.1	0.03	<0.1

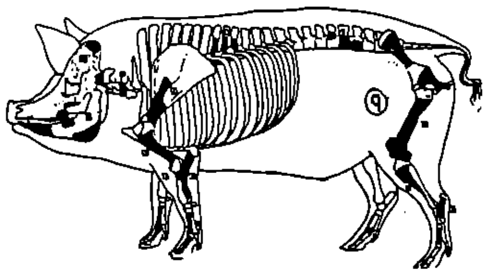
Table C42 (cont'd).
Summary of Faunal Remains
Mill Pond Phase V

Taxon	NISP	Pct.	MNI Ad / IM	MNI Pct.	Meat Weight (lbs) Ad / IM	Meat Weight (lbs) Total	Meat Weight (lbs) Pct.	Skeletal Weight	Skeletal Pct.	Biomass (kg)	Biomass Pct.
Wild Mammals	0	0.0						0.0	0.0	0.00	0.0
Domestic Birds	40	3.4	6 / 1	23.3	35.0 / 1.0	36.0	1.8	116.7	1.4	1.64	1.5
Domestic Mammals	322	27.6	13 / 4	56.7	1810.0 /165.0	1975.0	97.6	5475.0	66.1	68.99	65.1
Commensals	2	0.2	1 / 0	3.3				0.6	<0.1	0.02	<0.1
Wild	22	1.9	3 / 0	10.0	4.2 / 0.0	4.2	0.2	8.9	0.1	0.22	0.2
Domestic	362	31.0	19 / 5	80.0	1845.0 /166.0	2011.0	99.3	5591.7	67.5	70.63	66.7
Identified	412	35.3	25 / 5	100.0	1858.2 /166.0	2024.2	100.0	5749.7	69.4	73.26	69.2
Unidentified	756	64.7						2537.9	30.6	32.67	30.8
Totals	1168	100.0	25 / 5	100.0	1858.2 /166.0	2024.2	100.0	8287.6	100.0	105.93	100.0

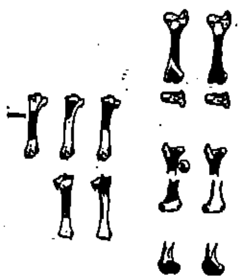
APPENDIX D.

BUTCHERING DIAGRAMS

LEGEND



9 Designates the Total Number of Bones of each Element Represented in the Assemblage

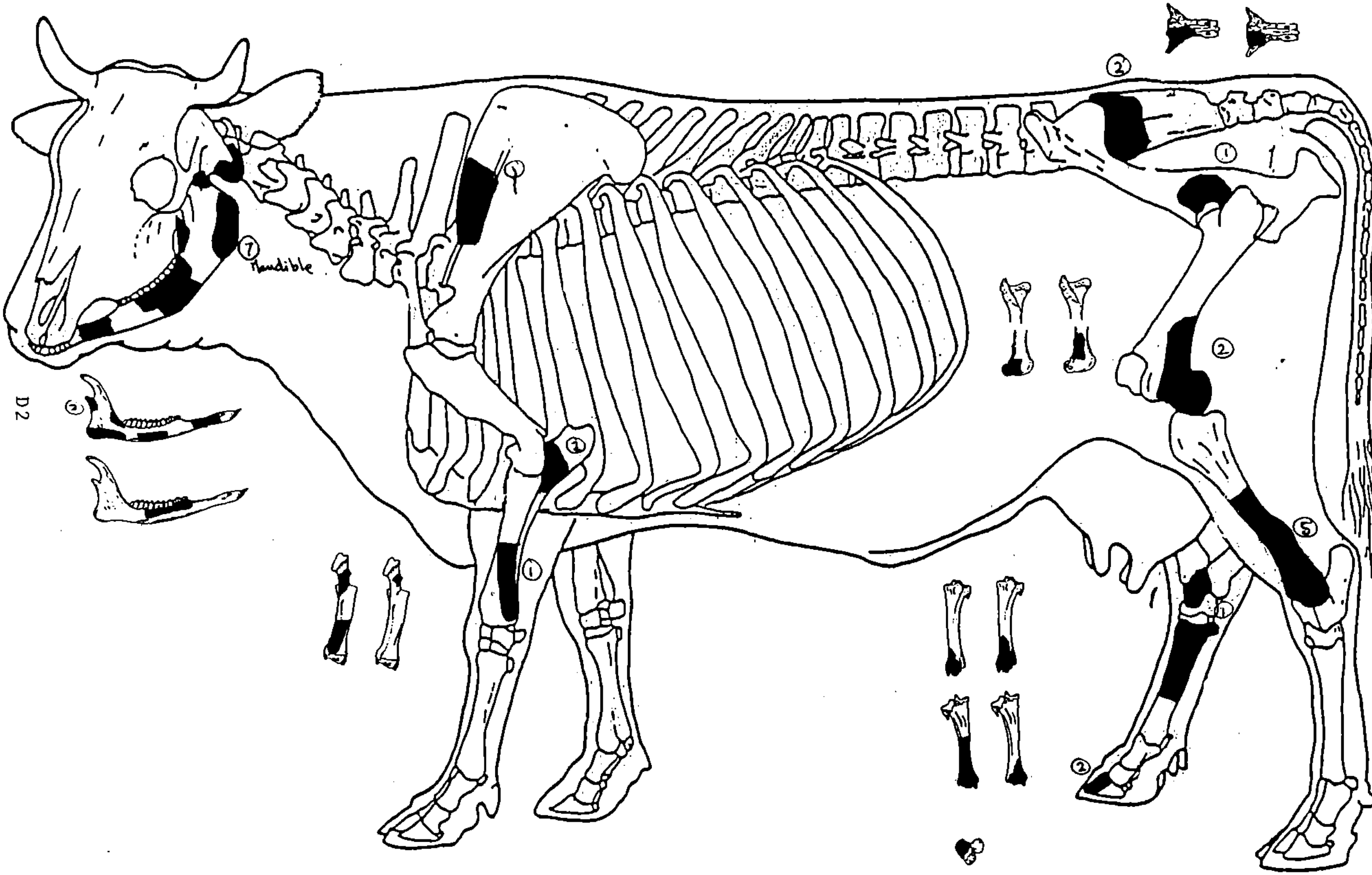


Detail of Cuts to Individual Bones. Each bone represents one bone in the assemblage, unless accompanied by a number -- ex. (2)

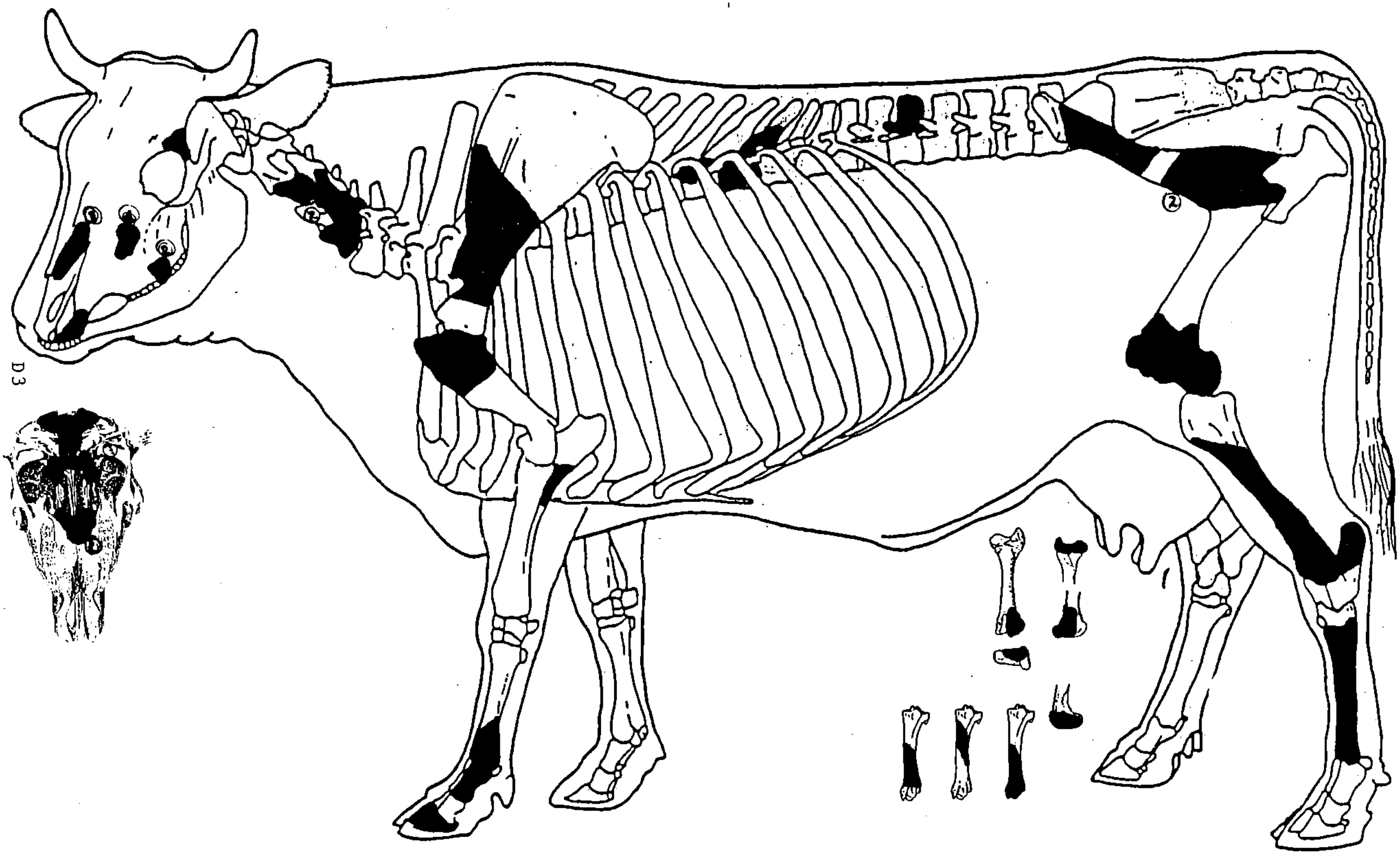
imm Represents Immature Individual.

ANATOMICAL LOCATION BEEF CUTS

PADDY'S ALLEY I

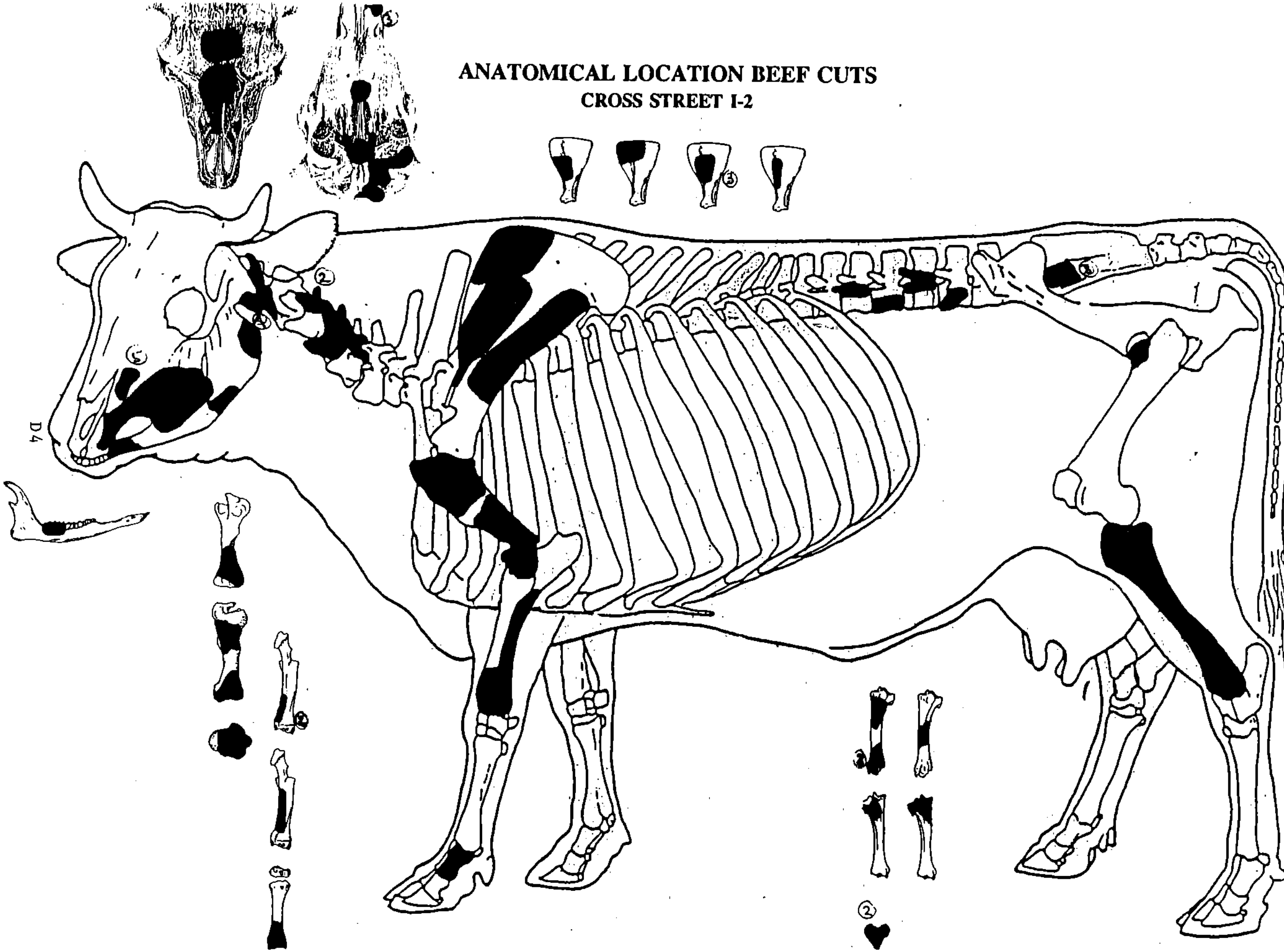


ANATOMICAL LOCATION BEEF CUTS
CROSS STREET I-1



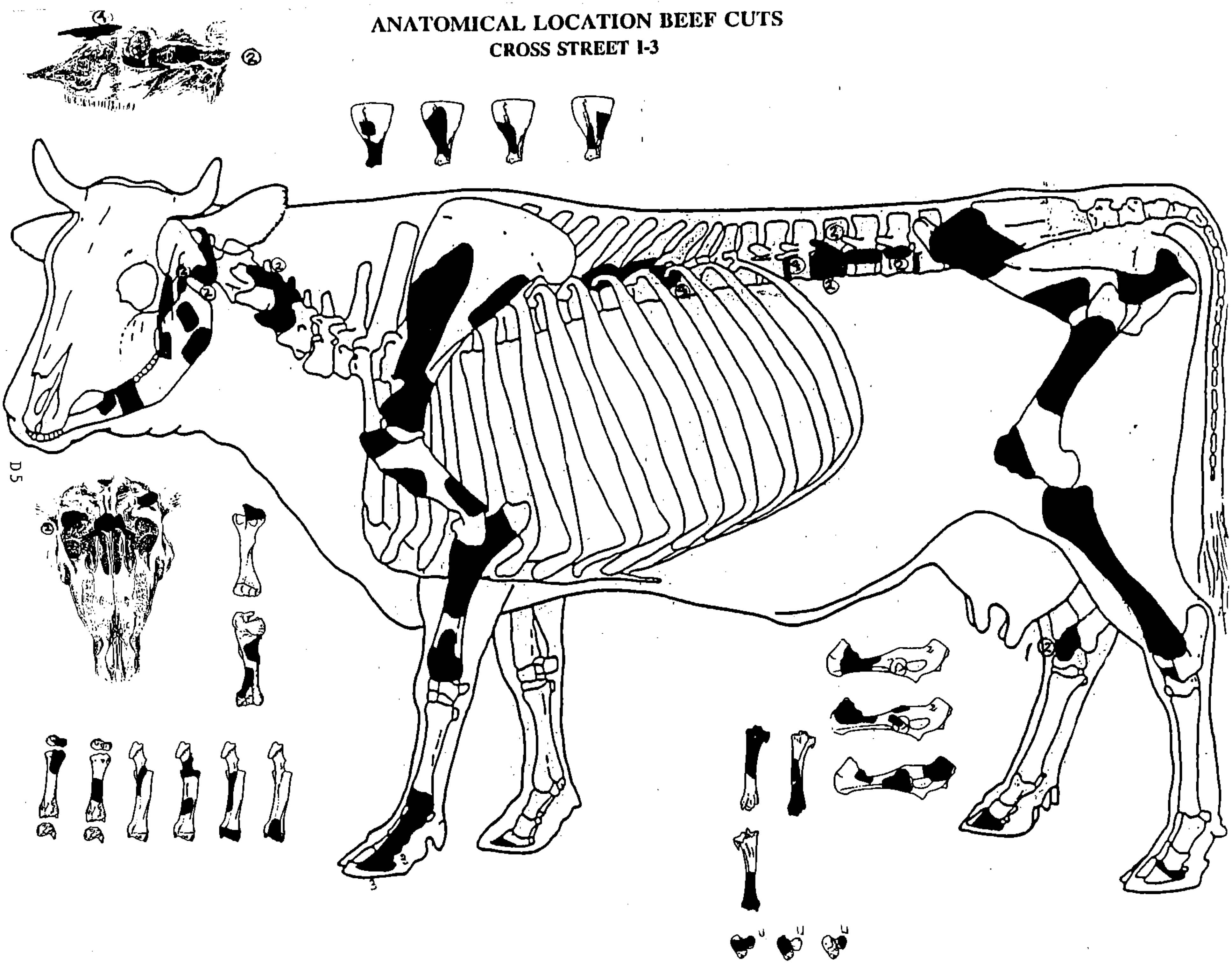
D3

ANATOMICAL LOCATION BEEF CUTS
CROSS STREET I-2



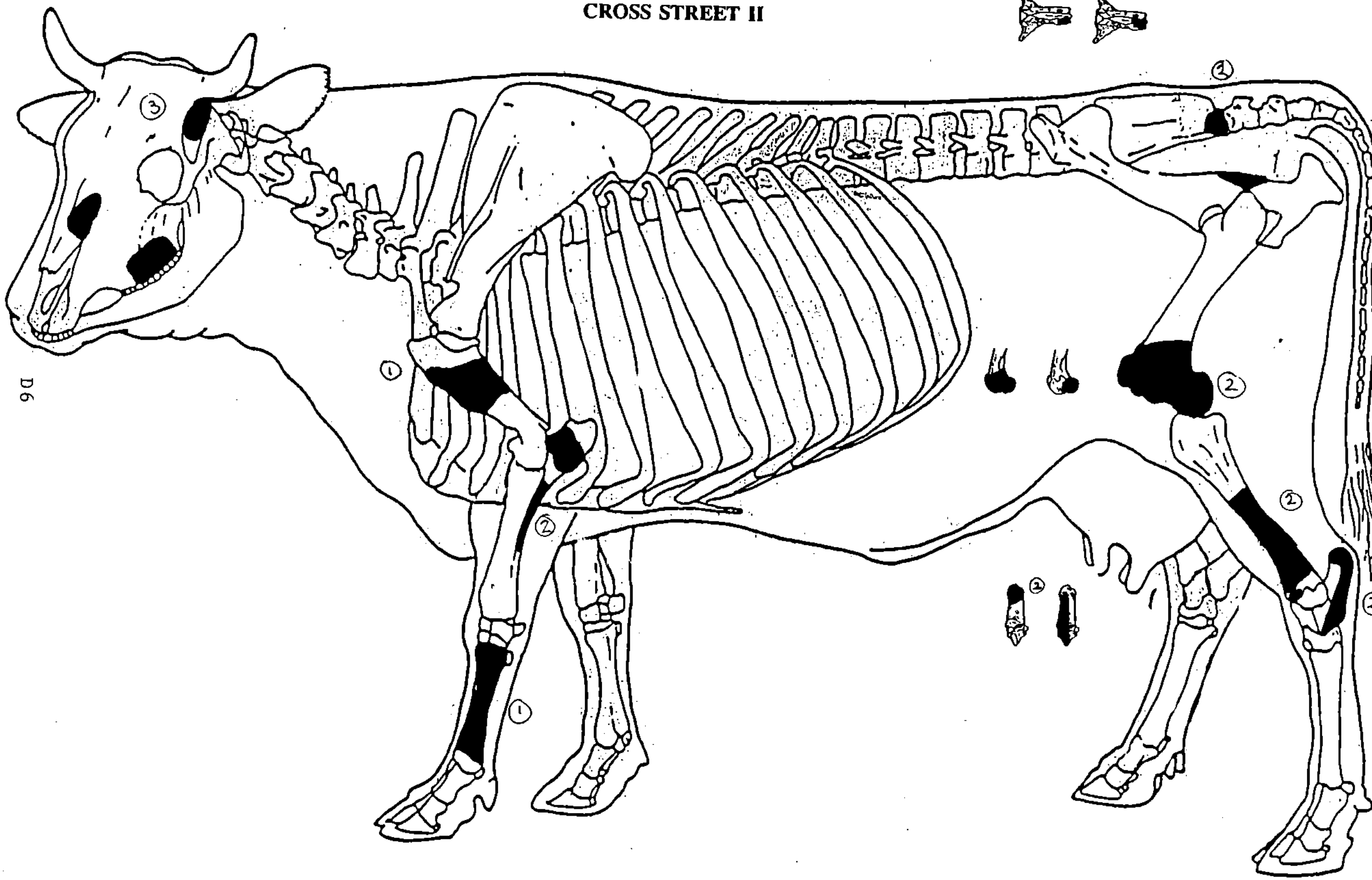
ANATOMICAL LOCATION BEEF CUTS

CROSS STREET 1-3



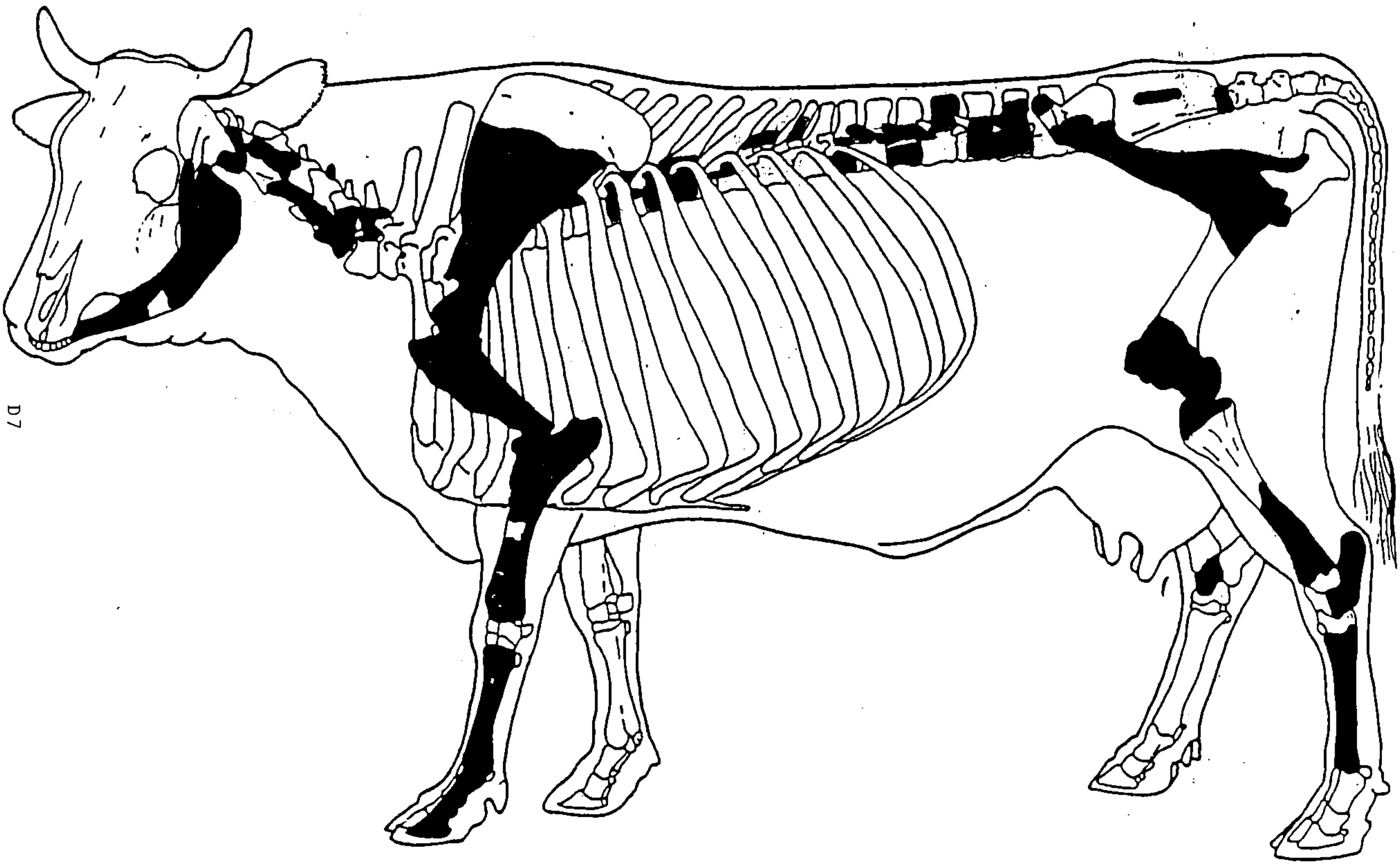
ANATOMICAL LOCATION BEEF CUTS

CROSS STREET II



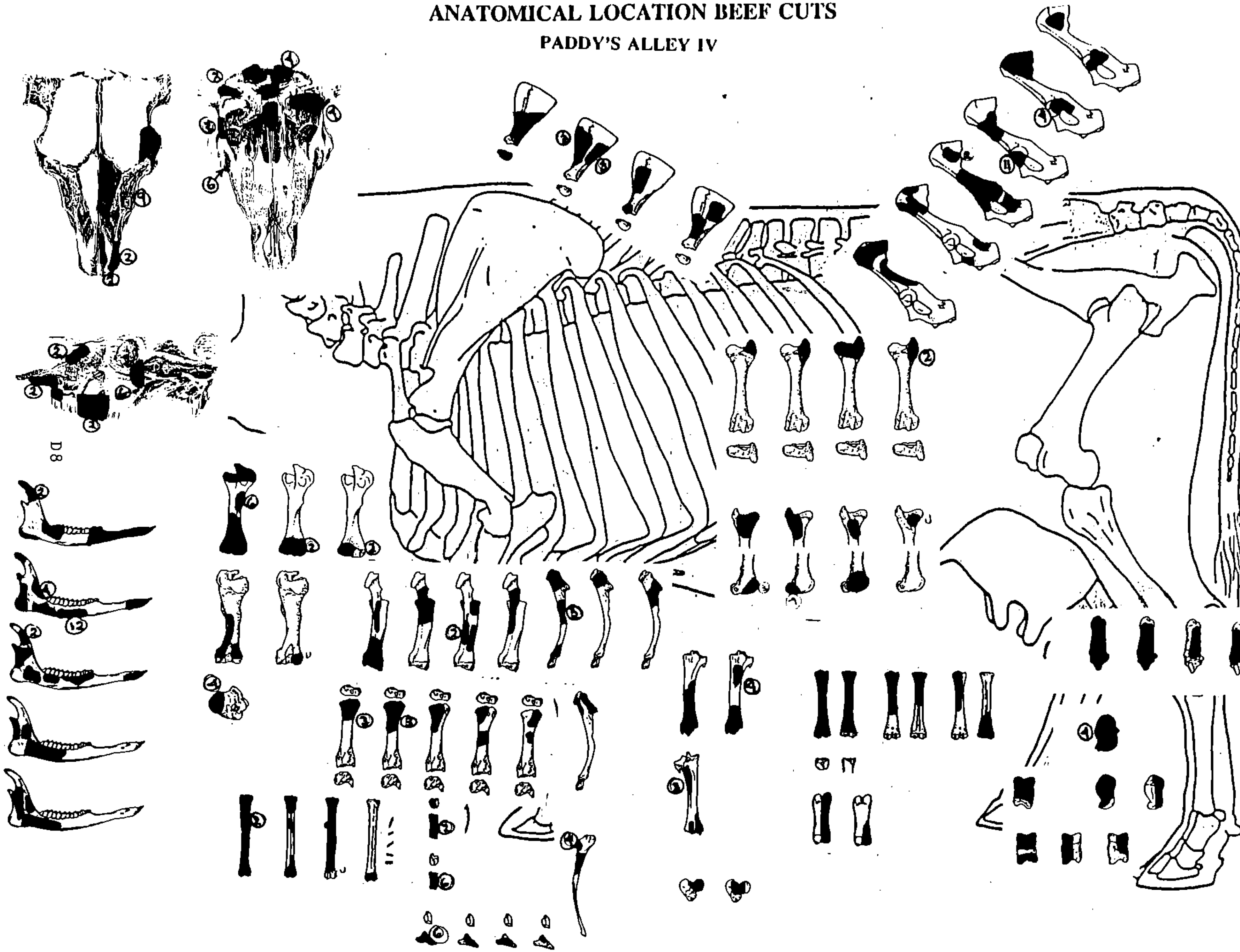
ANATOMICAL LOCATION BEEF CUTS

PADDY'S ALLEY IV



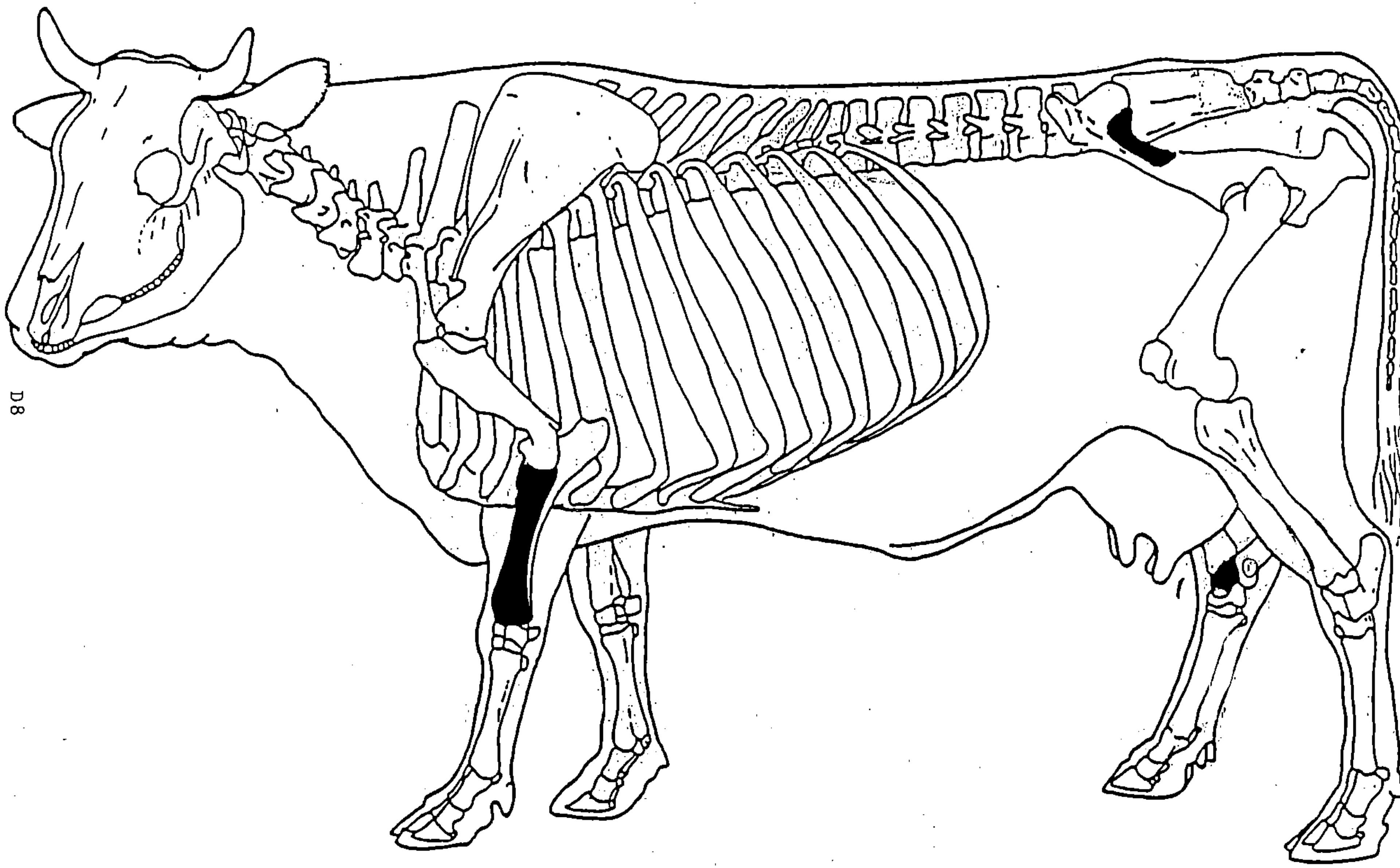
ANATOMICAL LOCATION BEEF CUTS

PADDY'S ALLEY IV

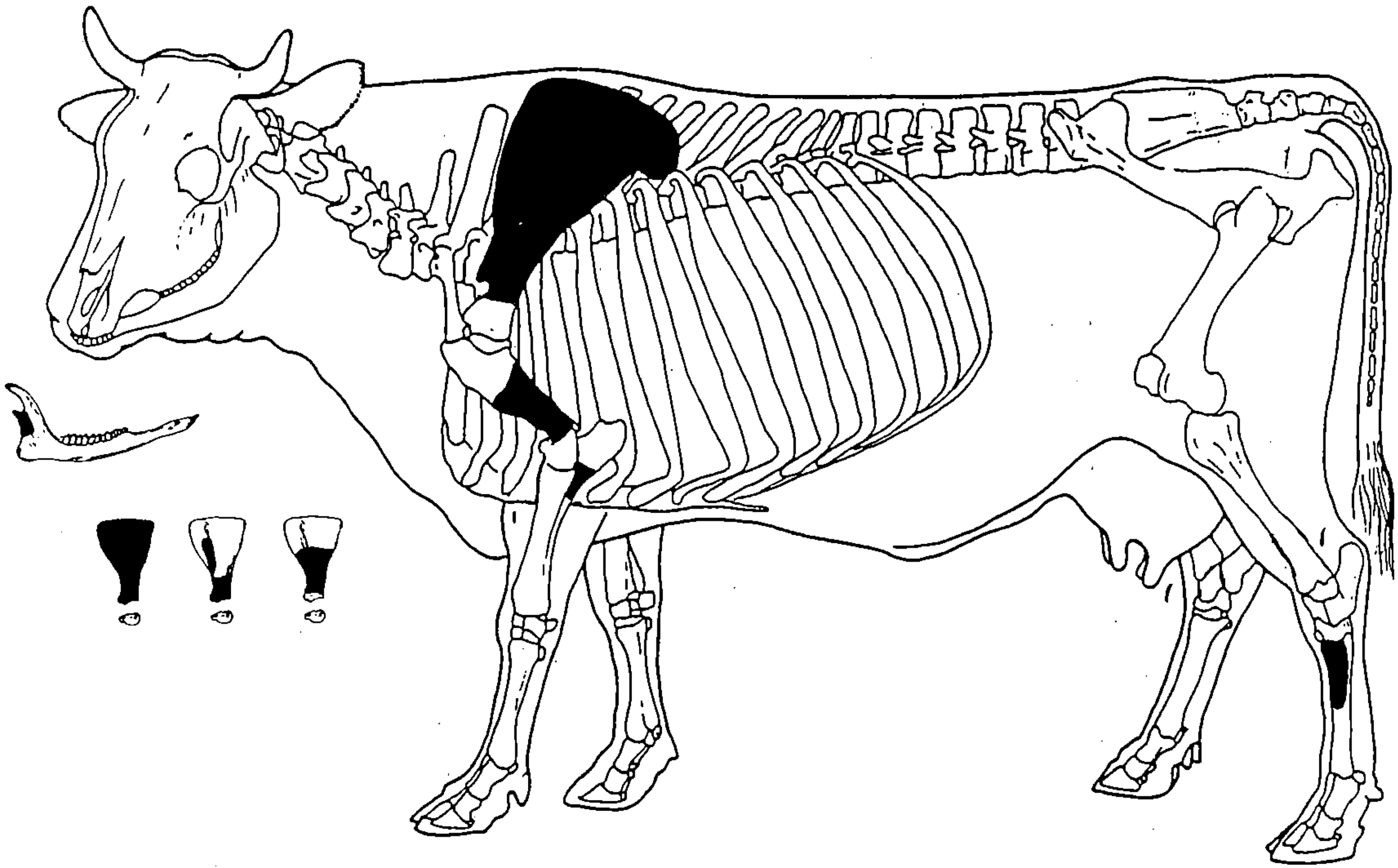


ANATOMICAL LOCATION VEAL CUTS

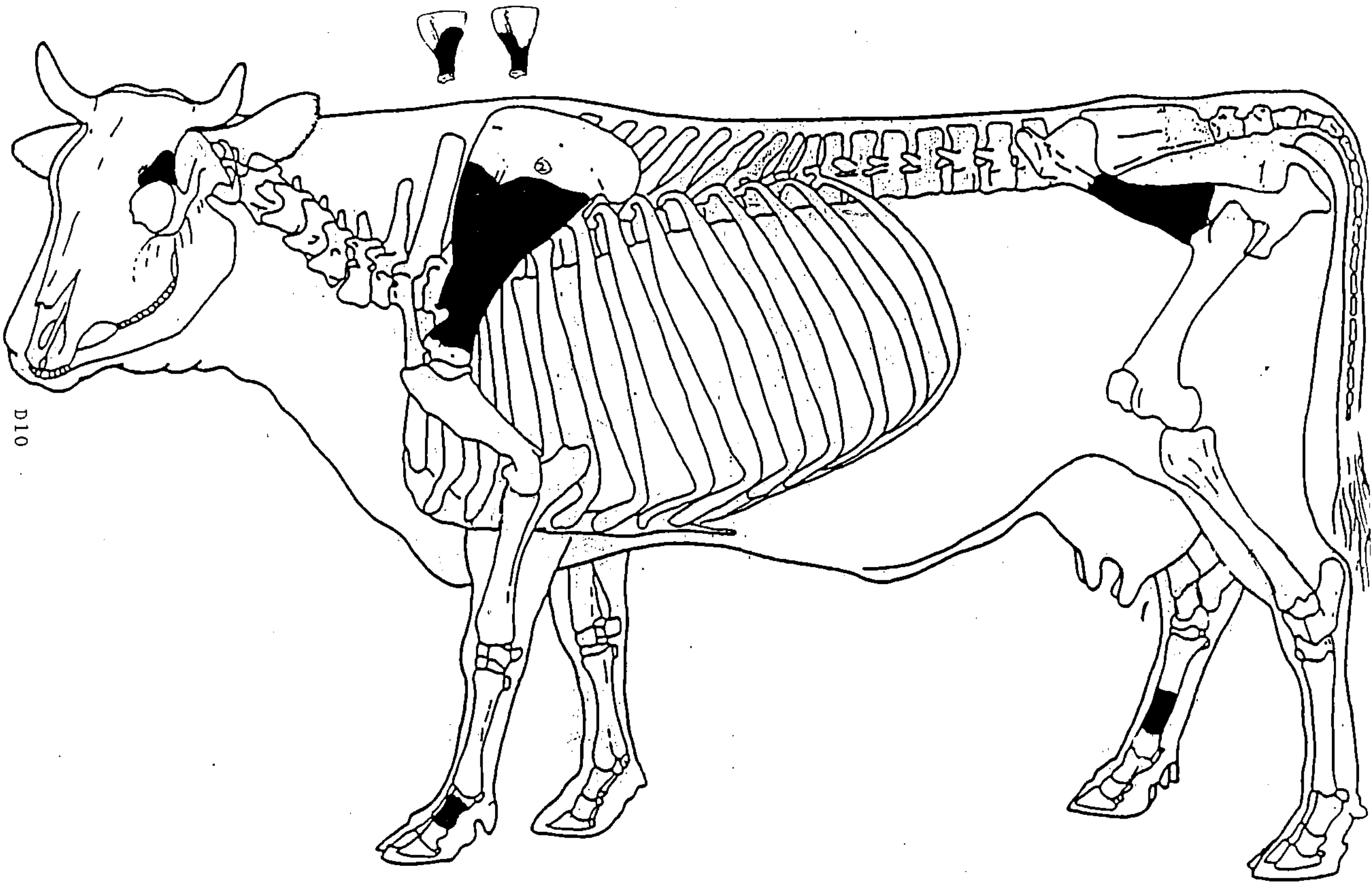
PADDY'S ALLEY I



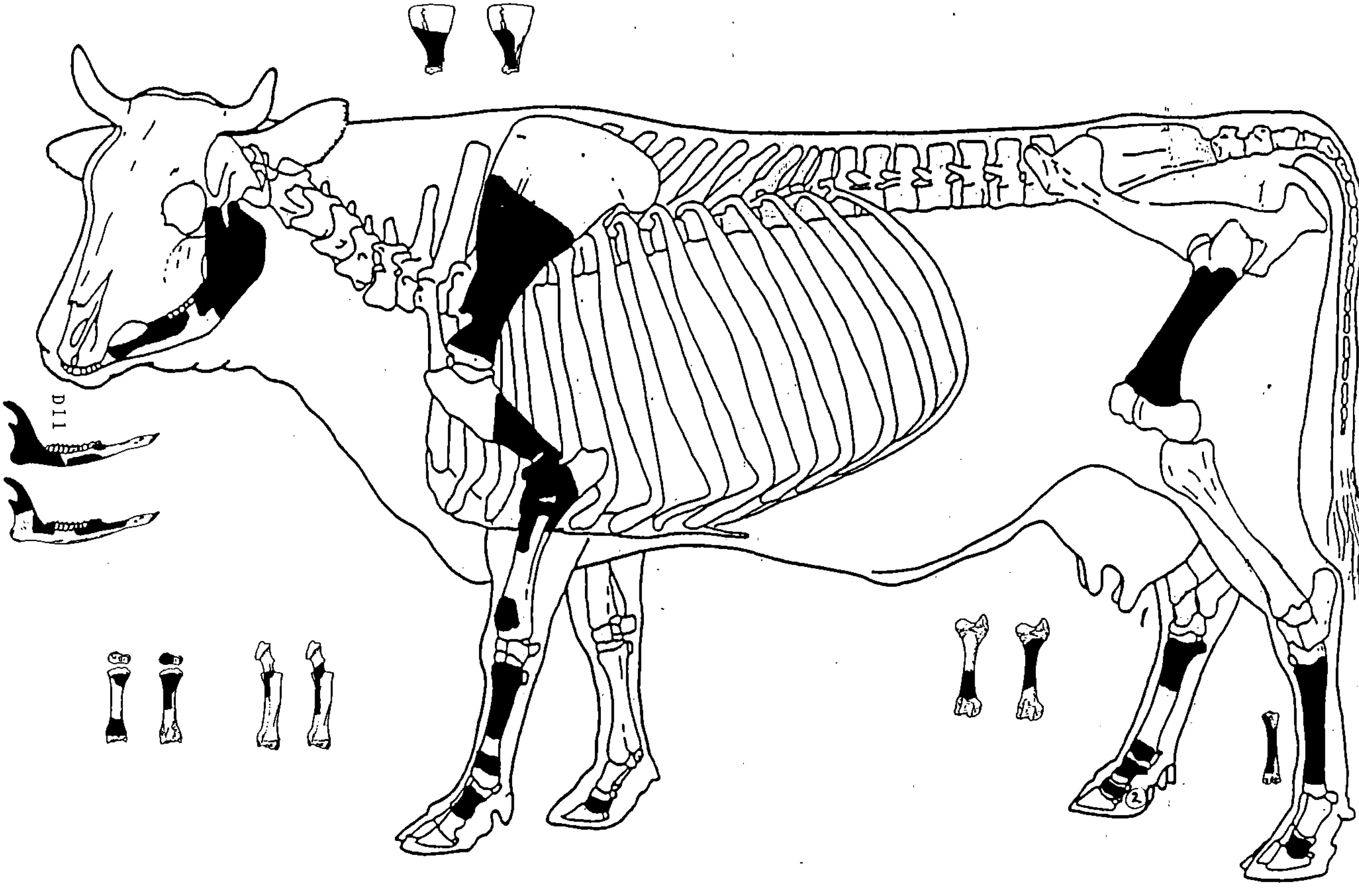
ANATOMICAL LOCATION VEAL CUTS
CROSS STREET I-1



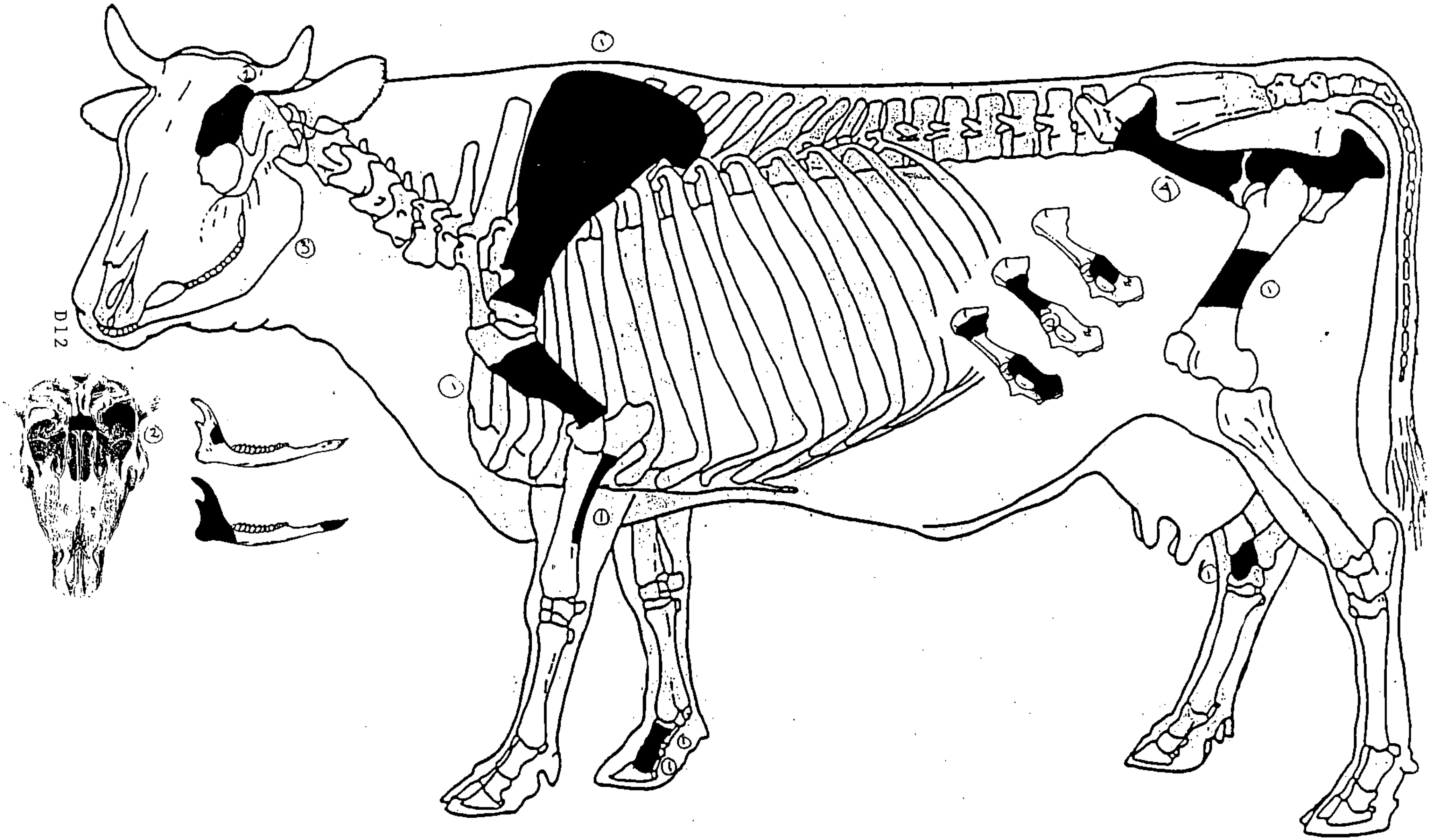
ANATOMICAL LOCATION VEAL CUTS
CROSS STREET 1-2



ANATOMICAL LOCATION VEAL CUTS
CROSS STREET 1-3

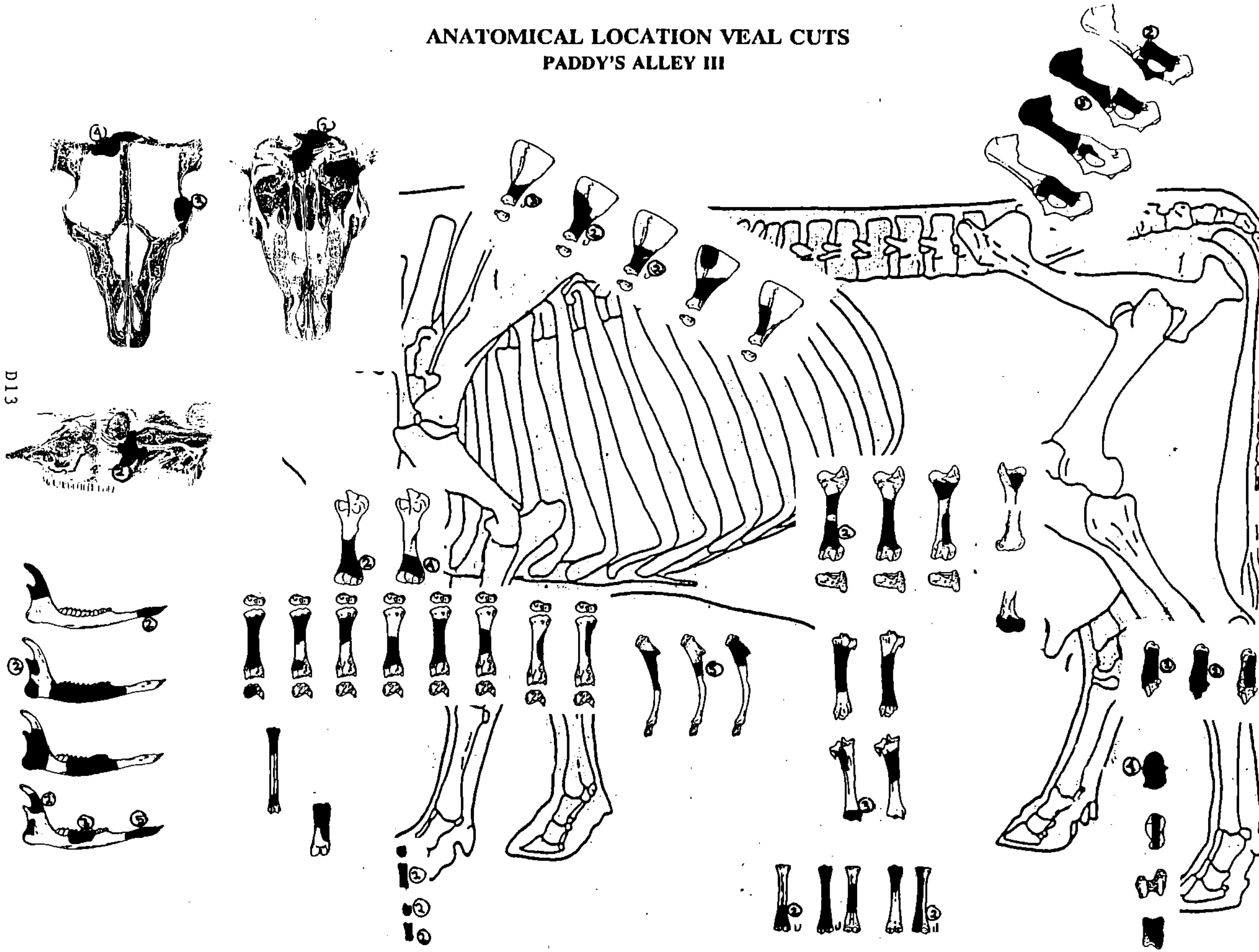


ANATOMICAL LOCATION VEAL CUTS
CROSS STREET II

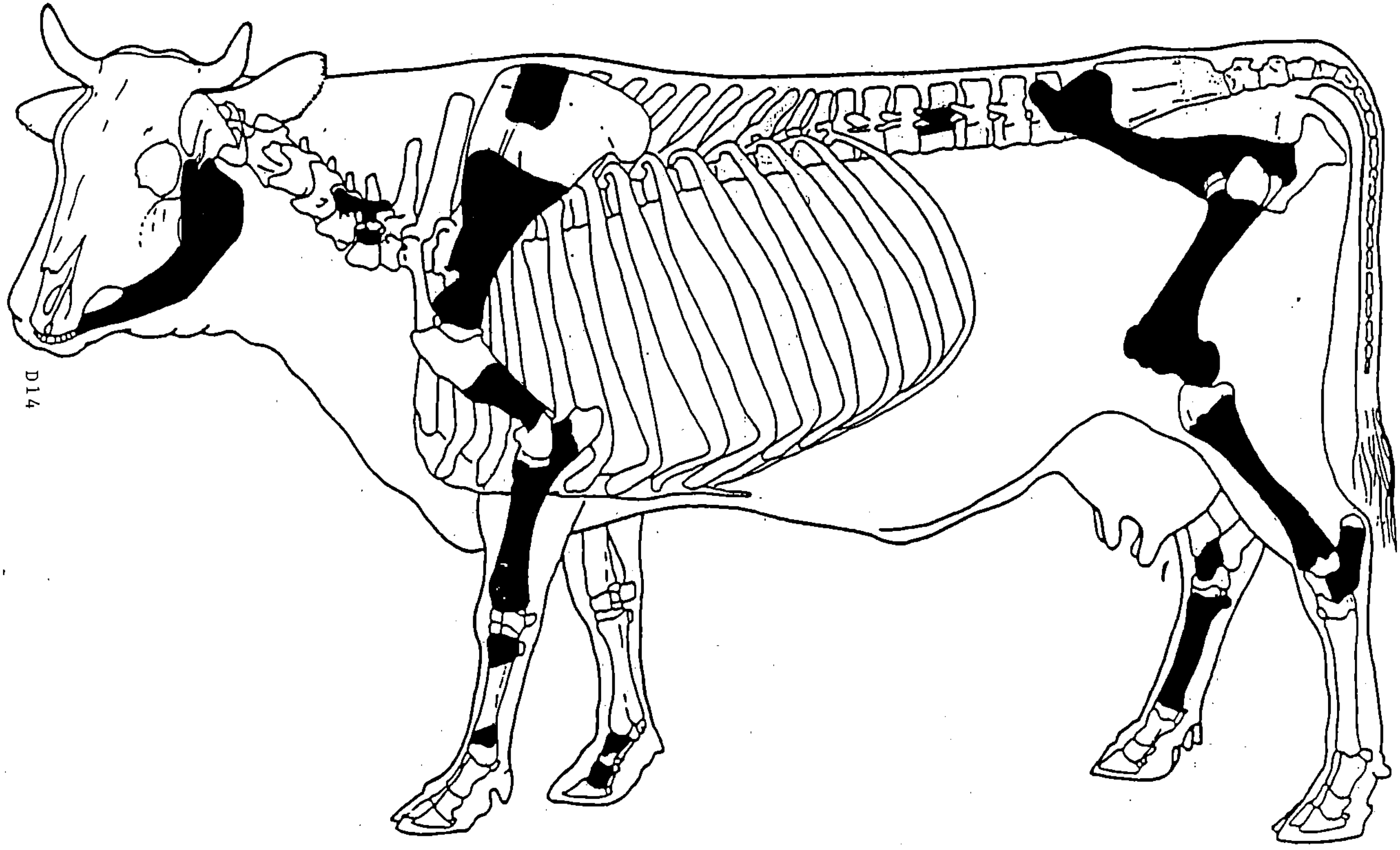


D12

ANATOMICAL LOCATION VEAL CUTS
PADDY'S ALLEY III

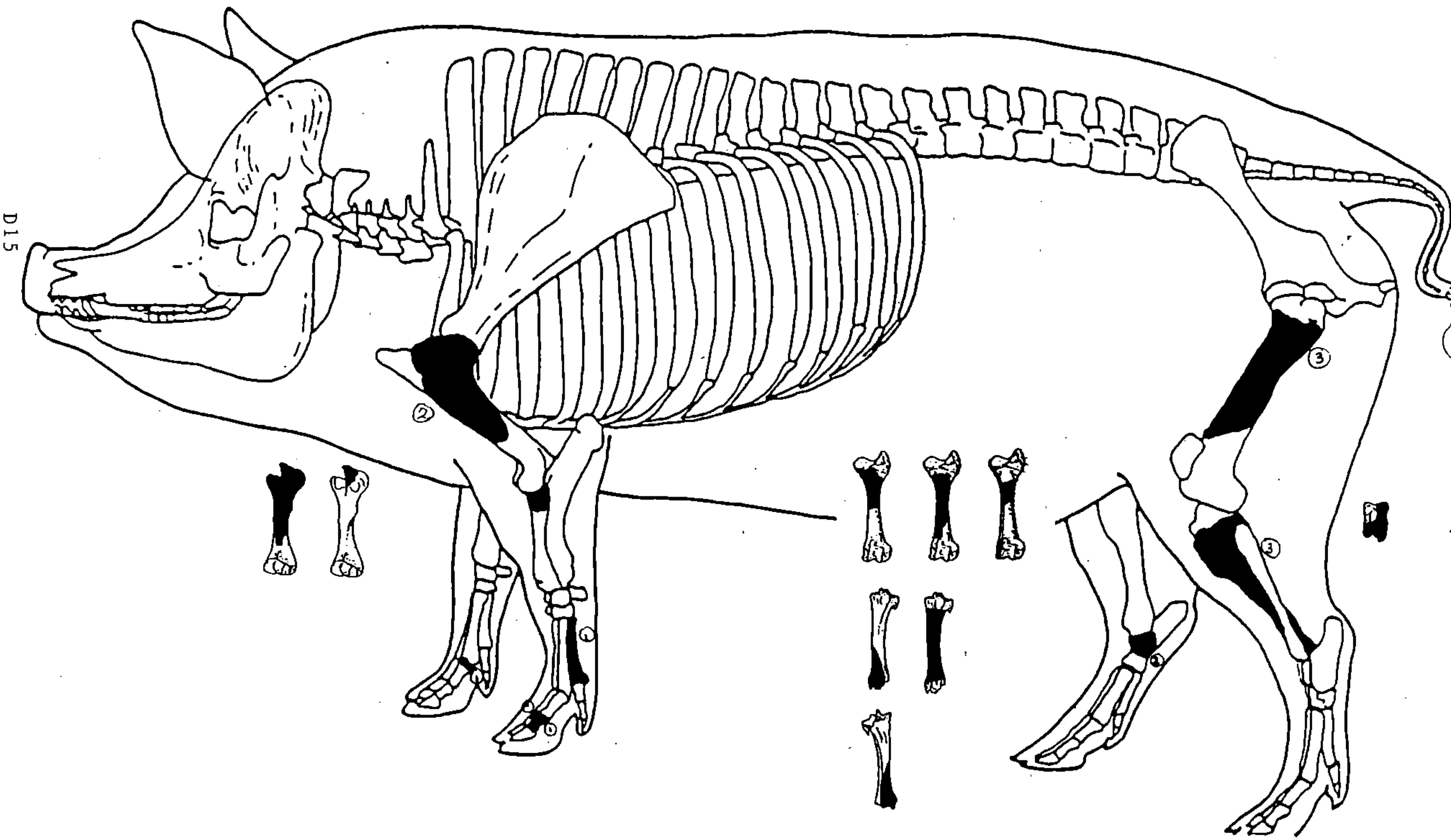


ANATOMICAL LOCATION VEAL CUTS
PADDY'S ALLEY IV

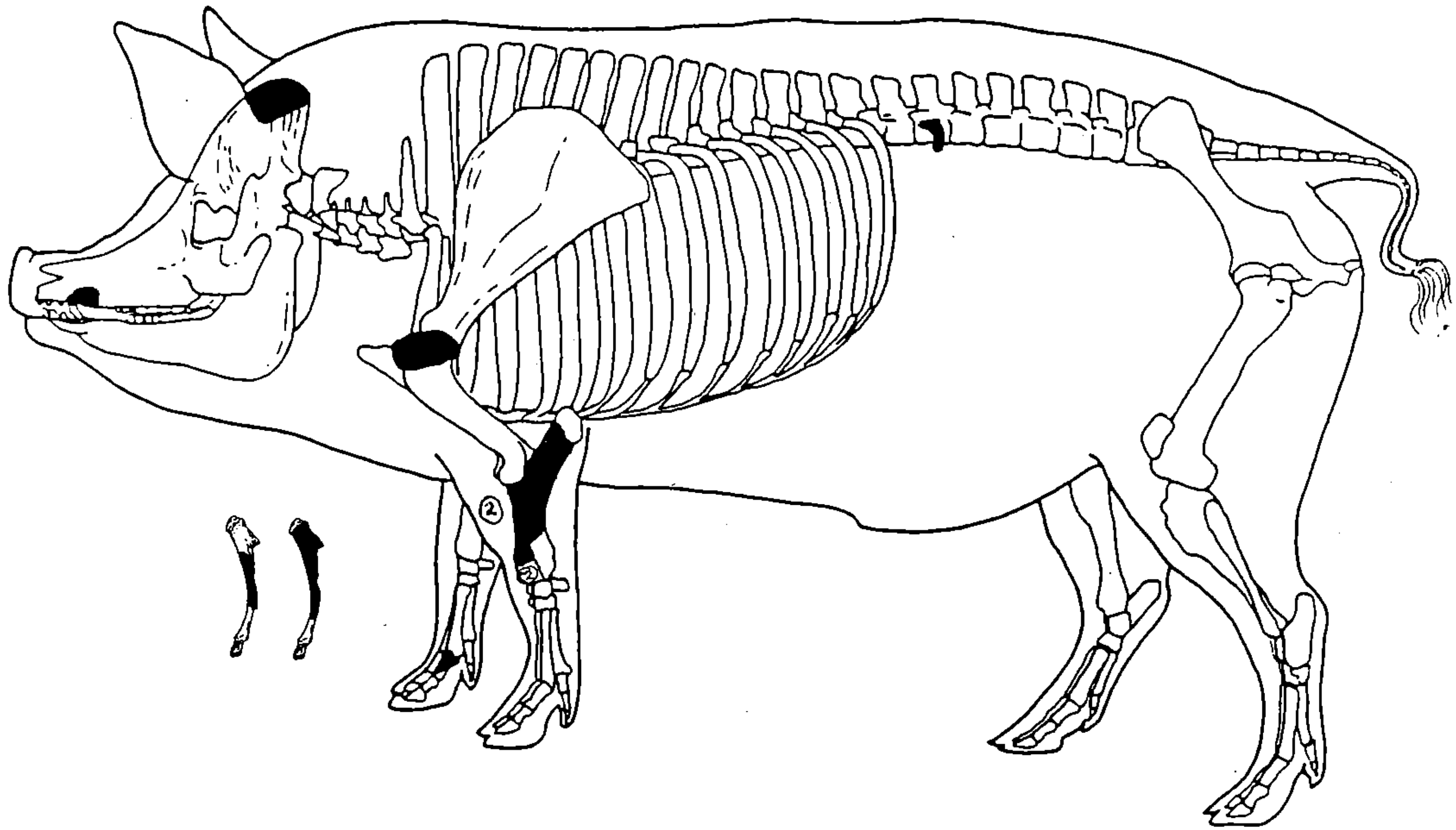


D14

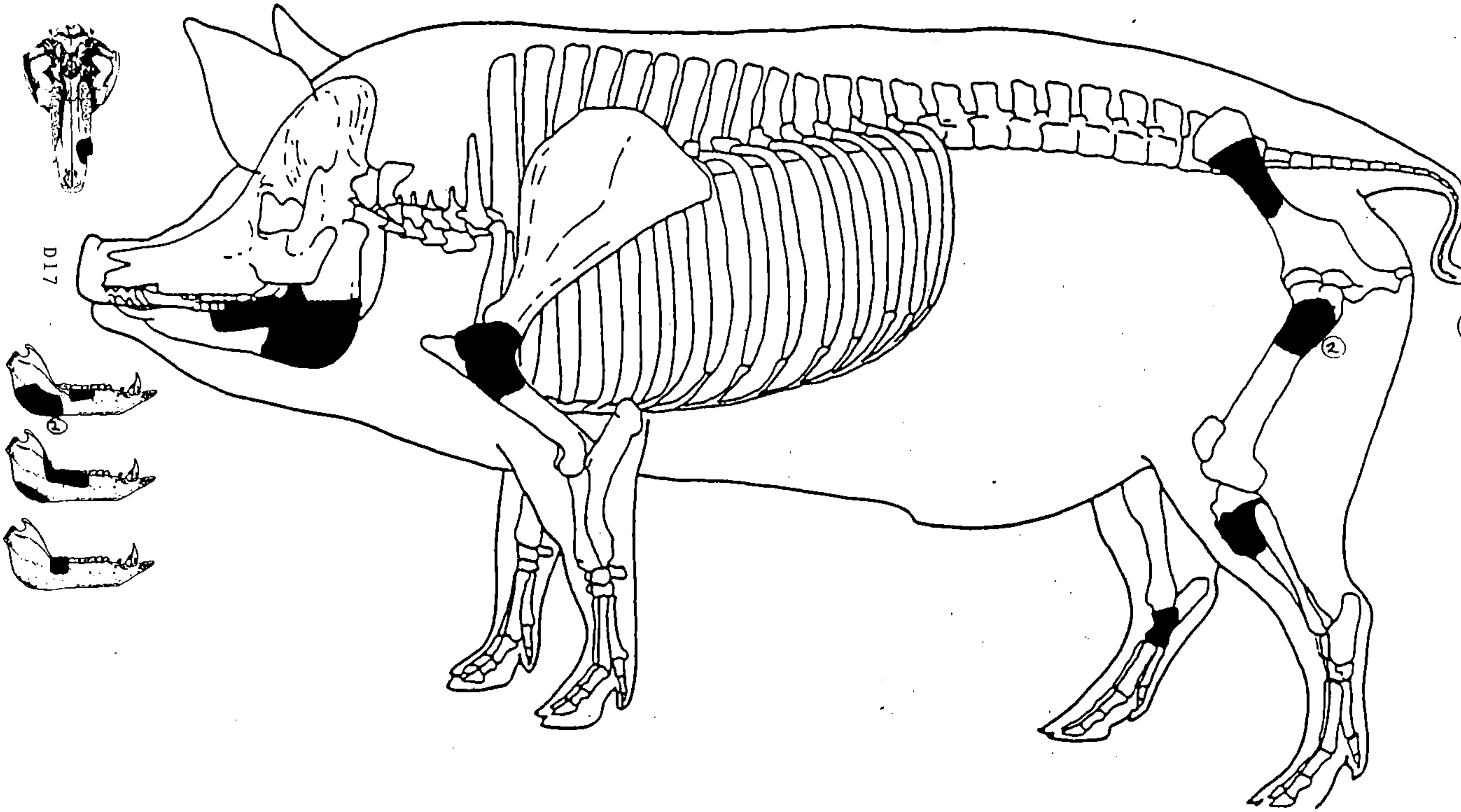
ANATOMICAL LOCATION PORK CUTS
PADDY'S ALLEY I



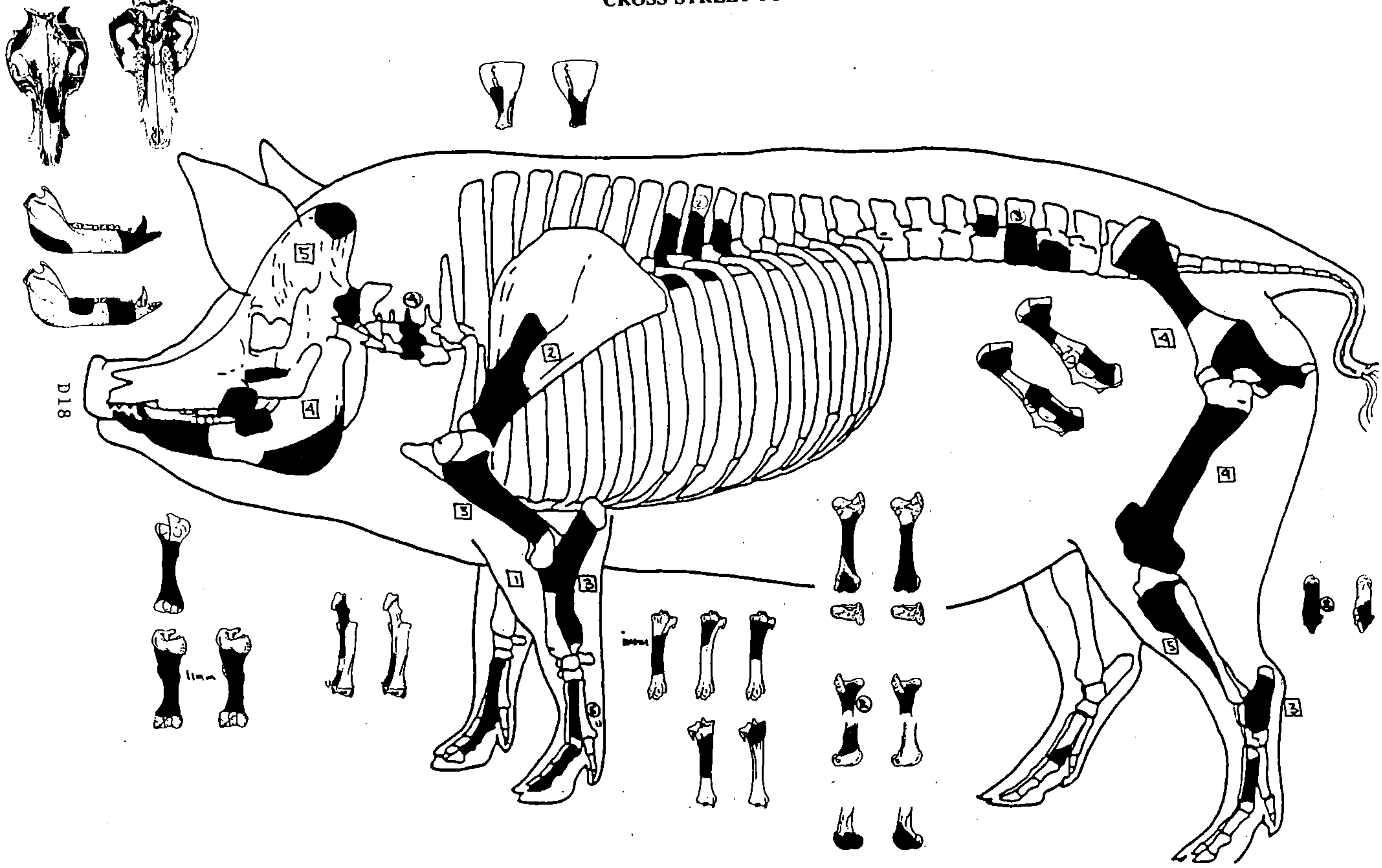
ANATOMICAL LOCATION PORK CUTS
CROSS STREET 1-1



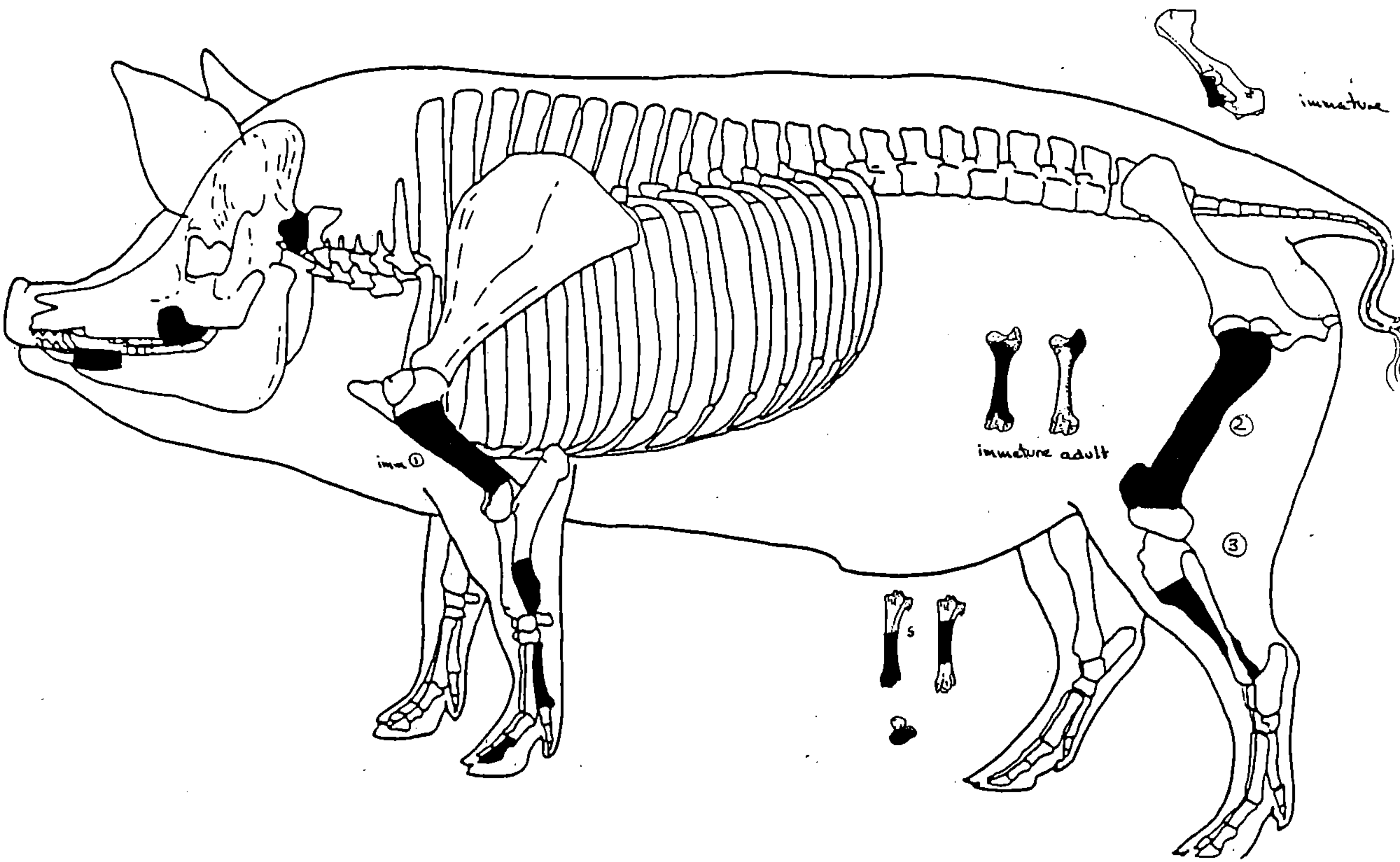
ANATOMICAL LOCATION PORK CUTS
CROSS STREET I-2



ANATOMICAL LOCATION PORK CUTS
CROSS STREET I-3

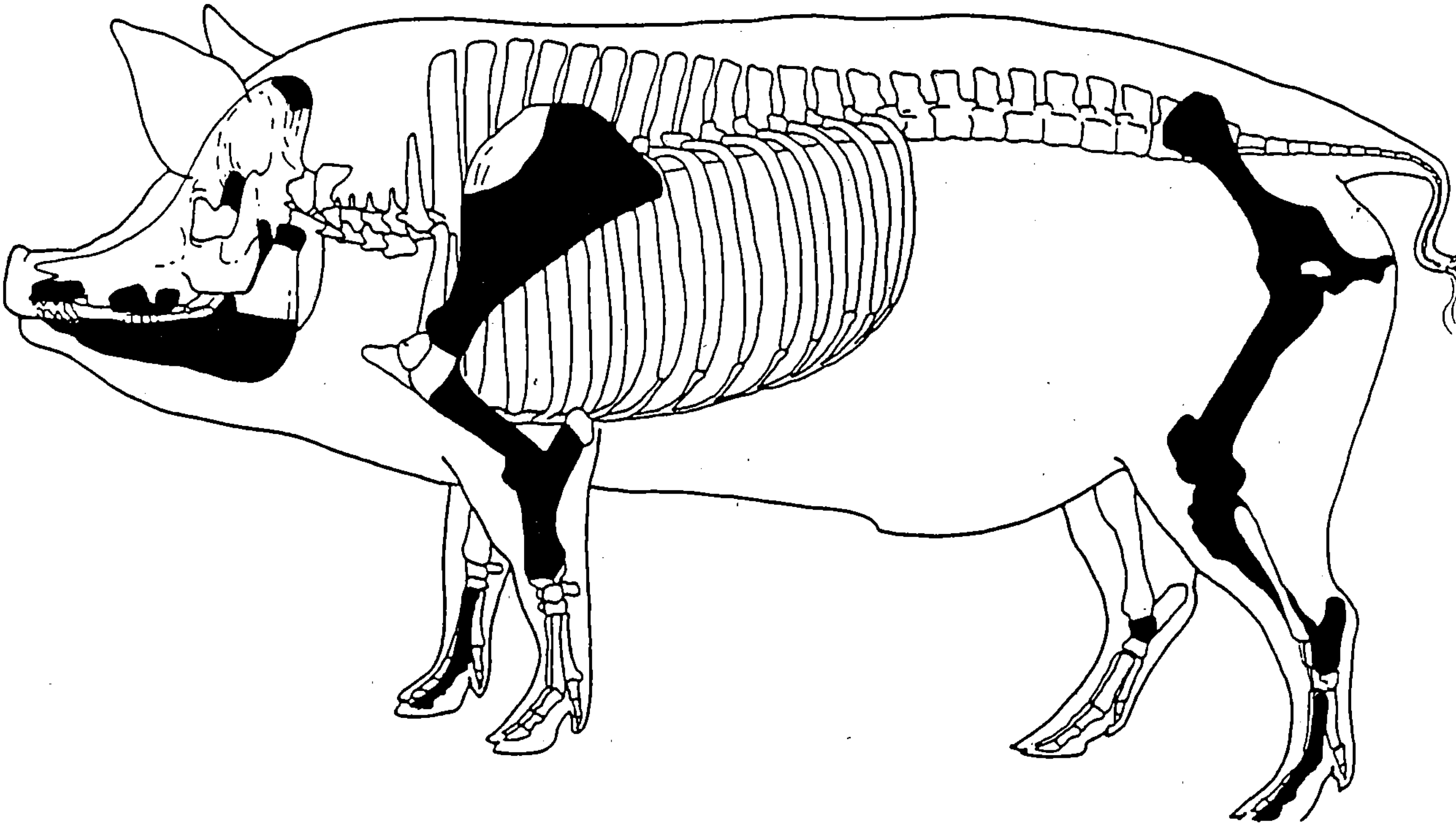


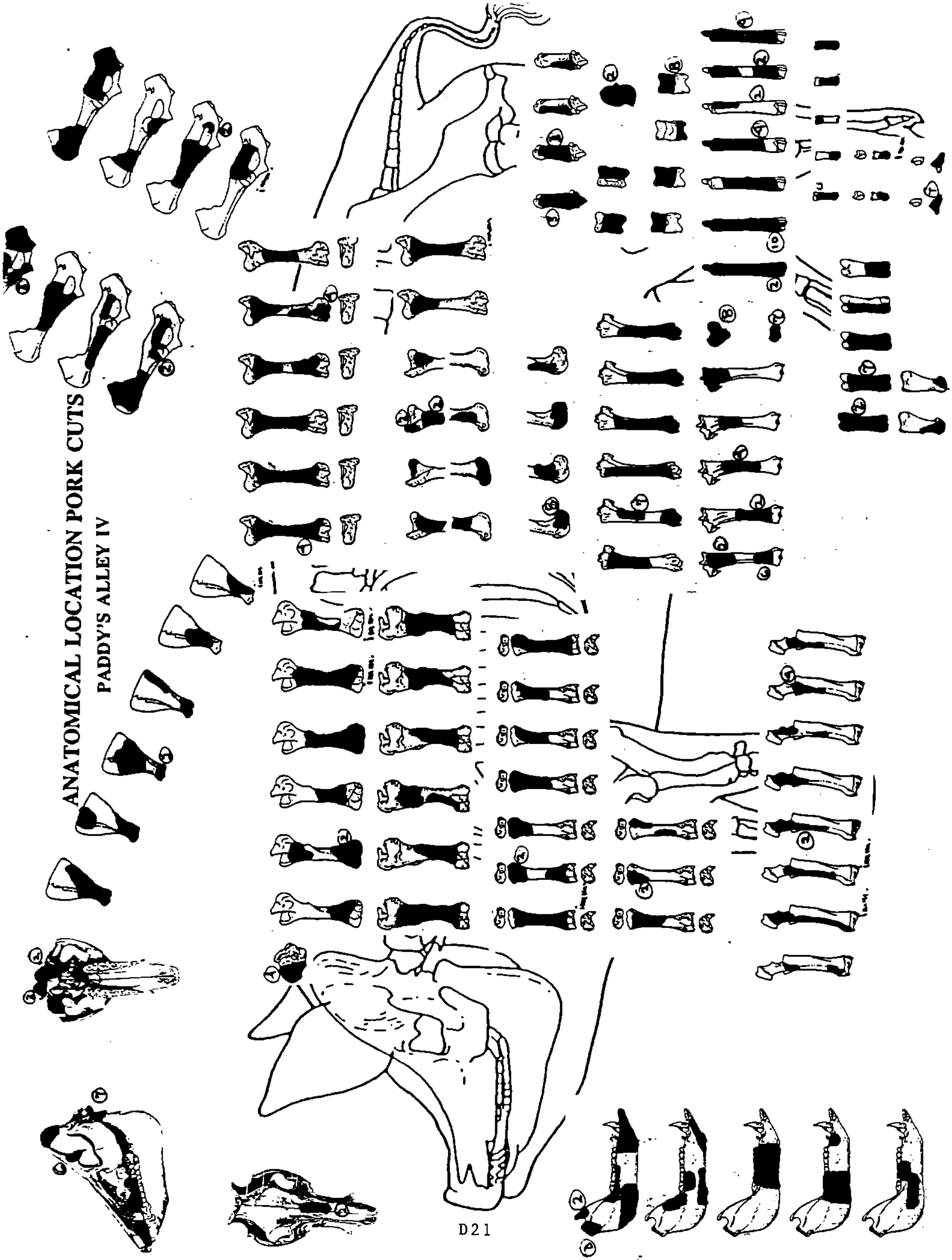
ANATOMICAL LOCATION PORK CUTS
CROSS STREET II



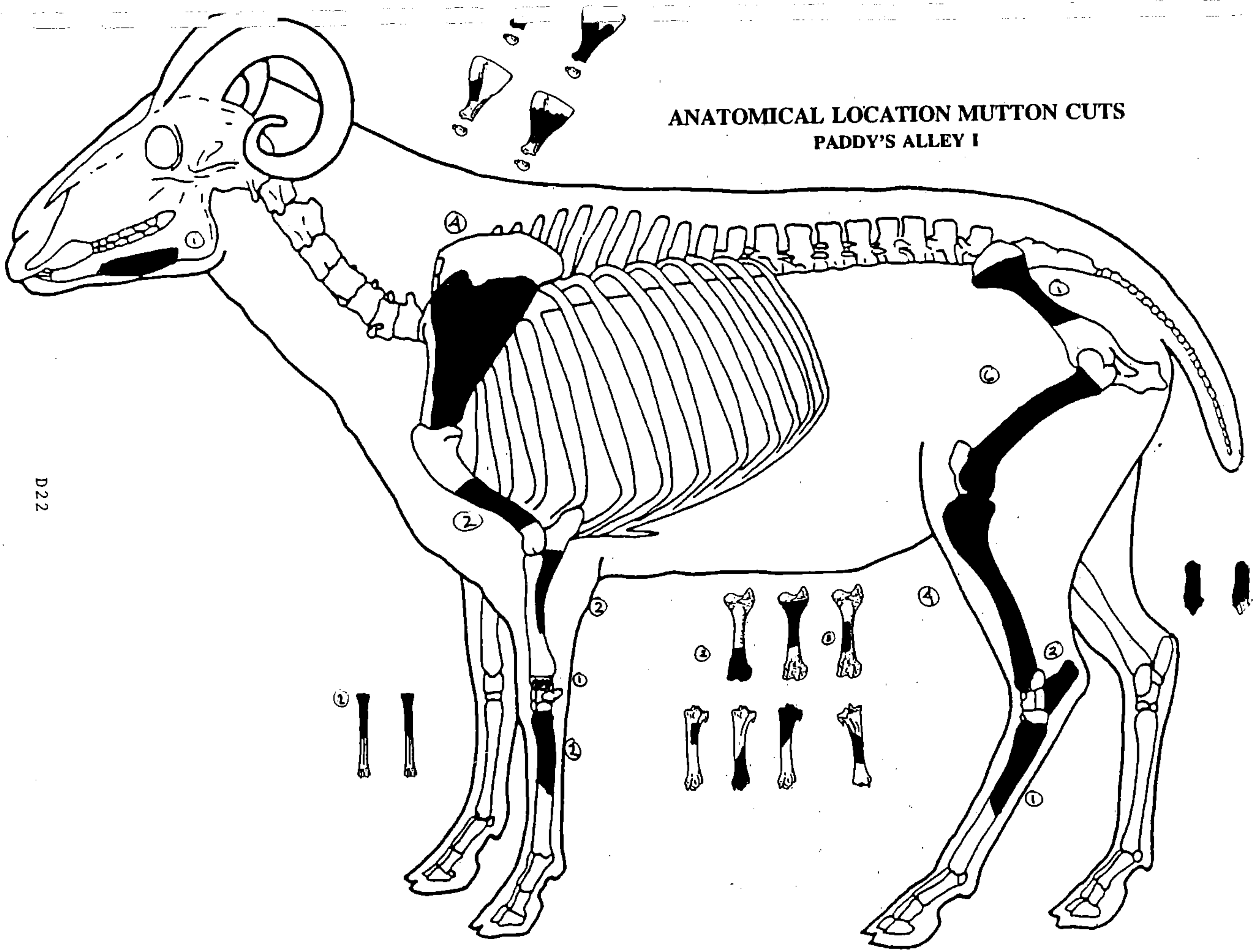
ANATOMICAL LOCATION PORK CUTS

PADDY'S ALLEY IV

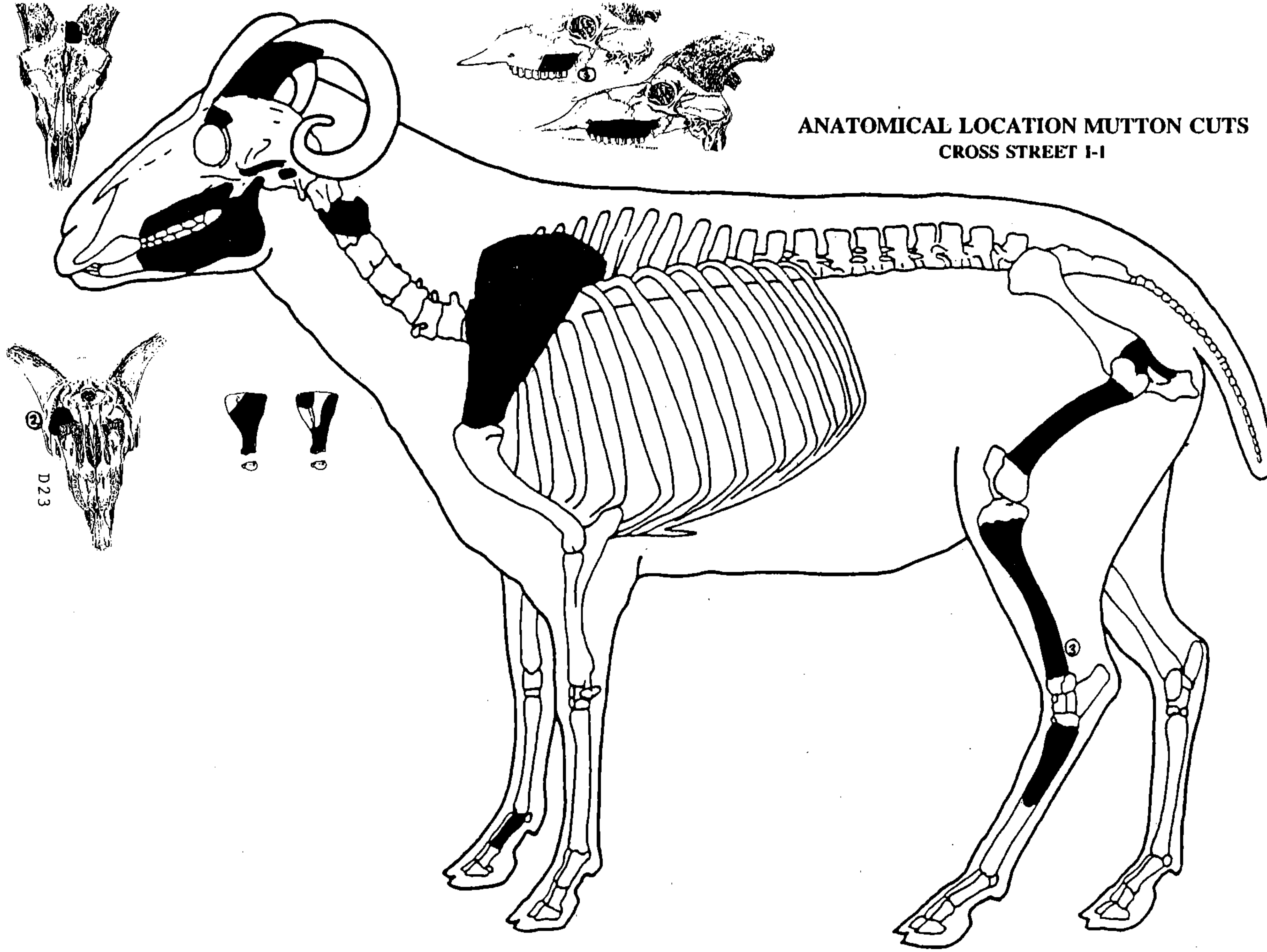



ANATOMICAL LOCATION PORK CUTS
PADDY'S ALLEY IV

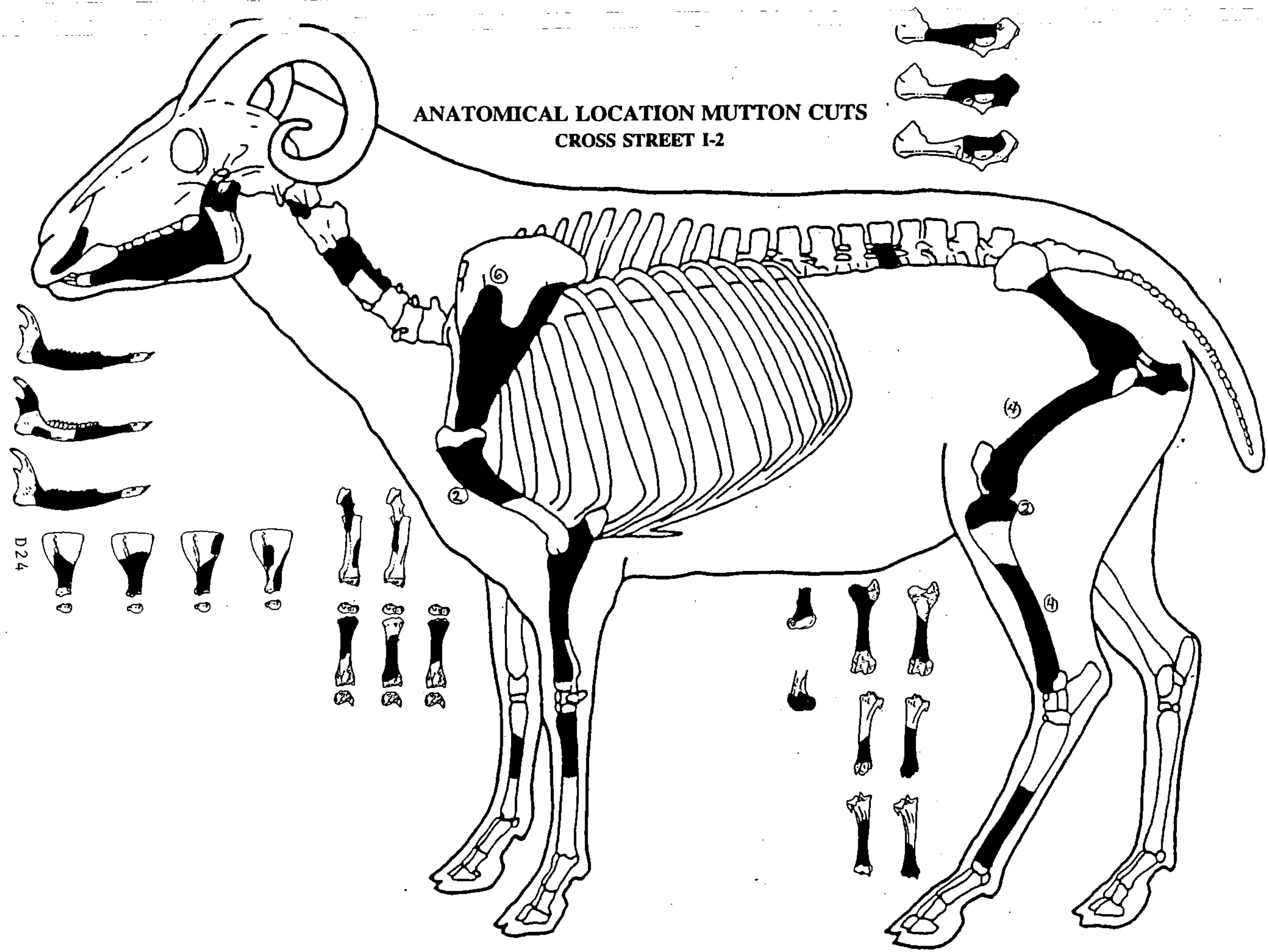
ANATOMICAL LOCATION MUTTON CUTS
PADDY'S ALLEY I



ANATOMICAL LOCATION MUTTON CUTS
CROSS STREET I-1



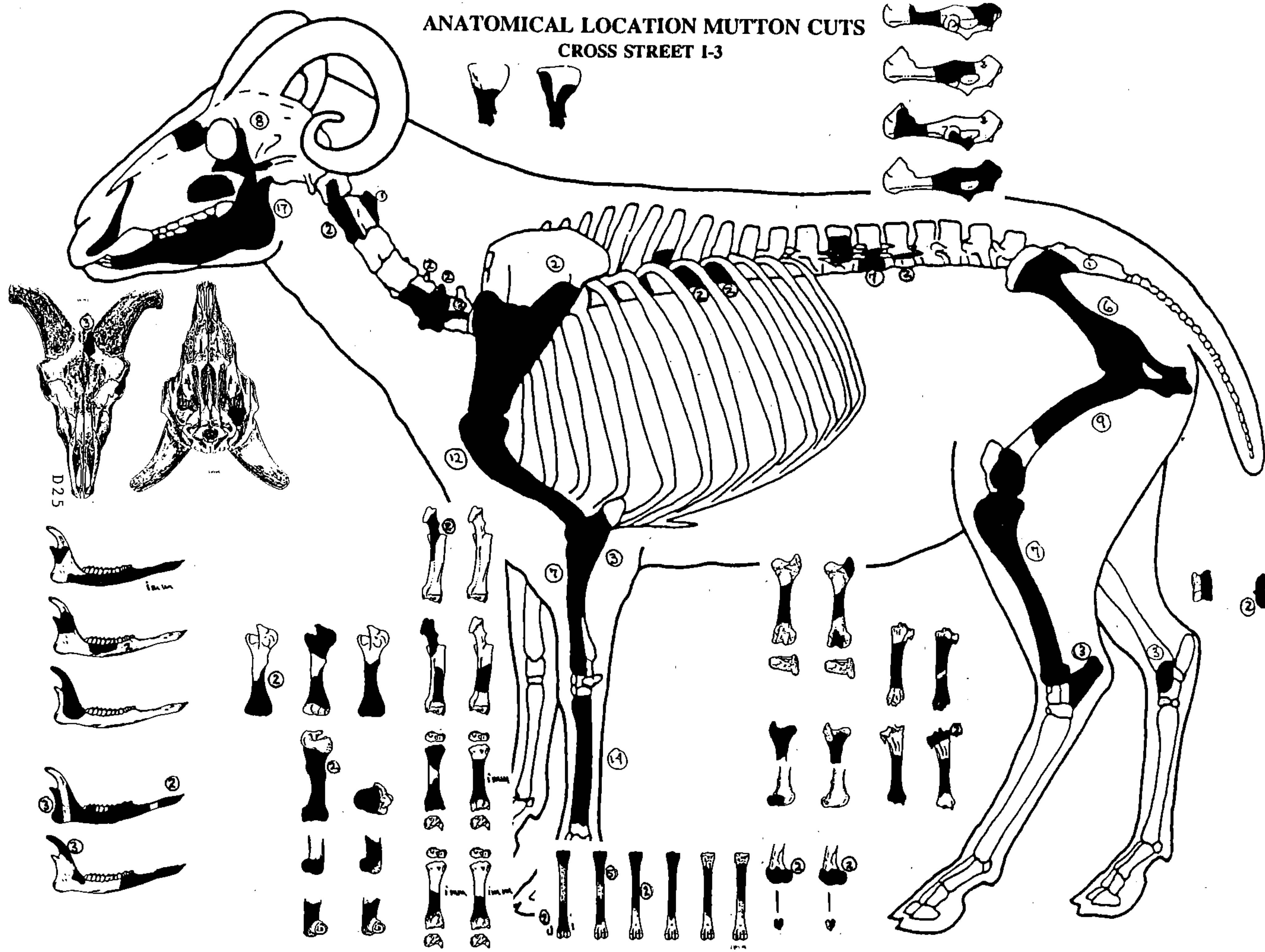
ANATOMICAL LOCATION MUTTON CUTS
CROSS STREET I-2



D24

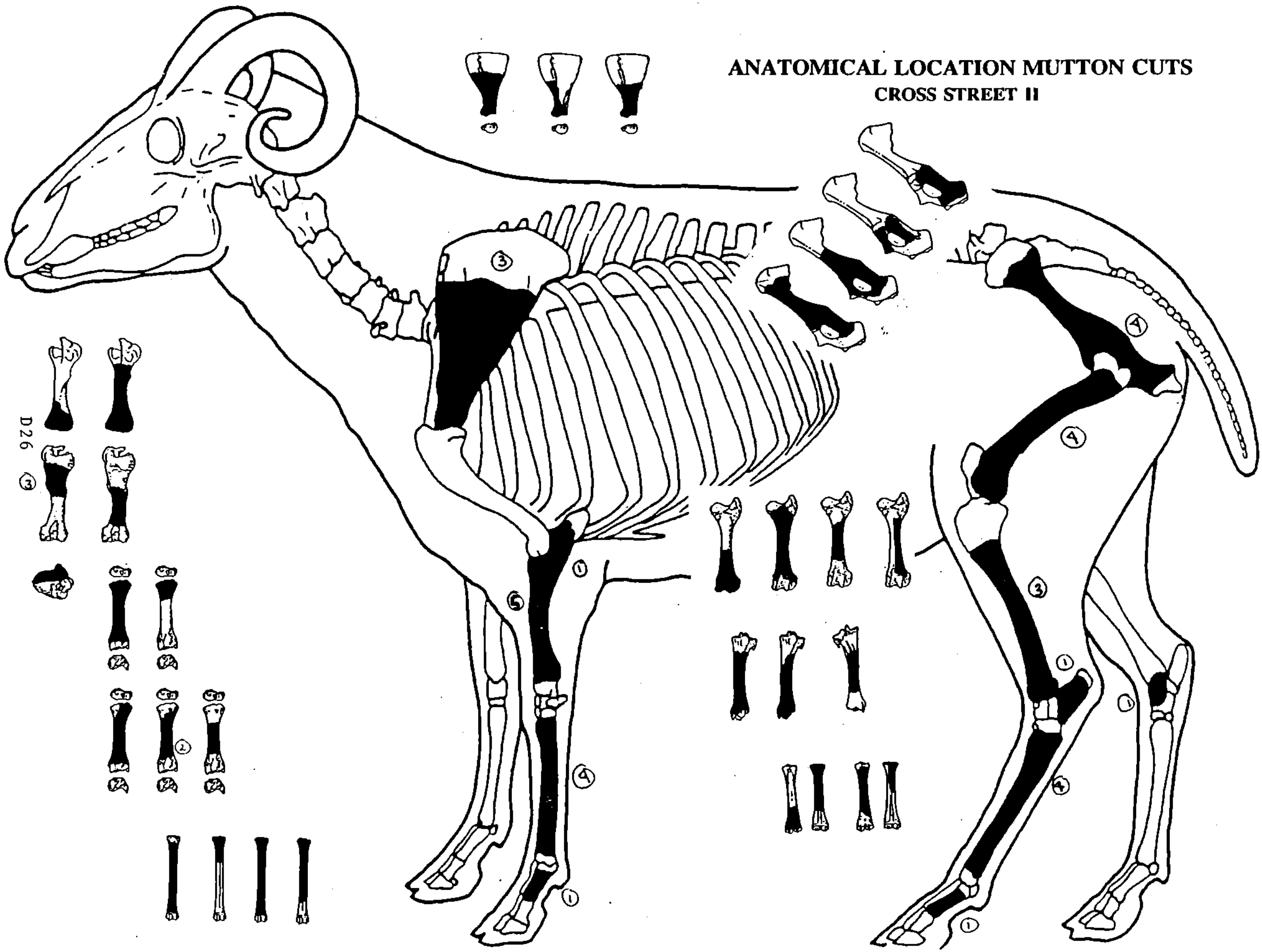
ANATOMICAL LOCATION MUTTON CUTS

CROSS STREET I-3



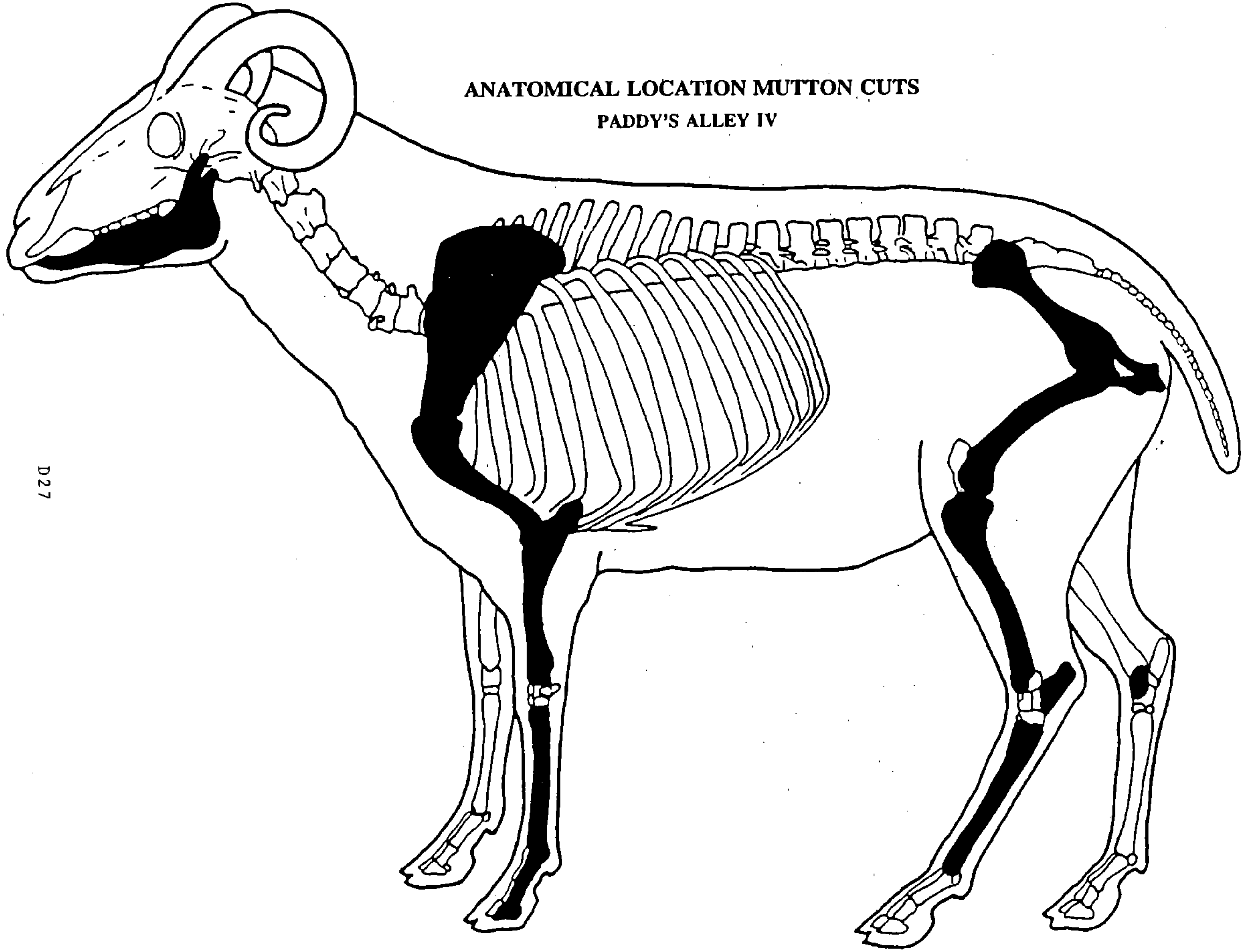
D25

ANATOMICAL LOCATION MUTTON CUTS
CROSS STREET II



ANATOMICAL LOCATION MUTTON CUTS

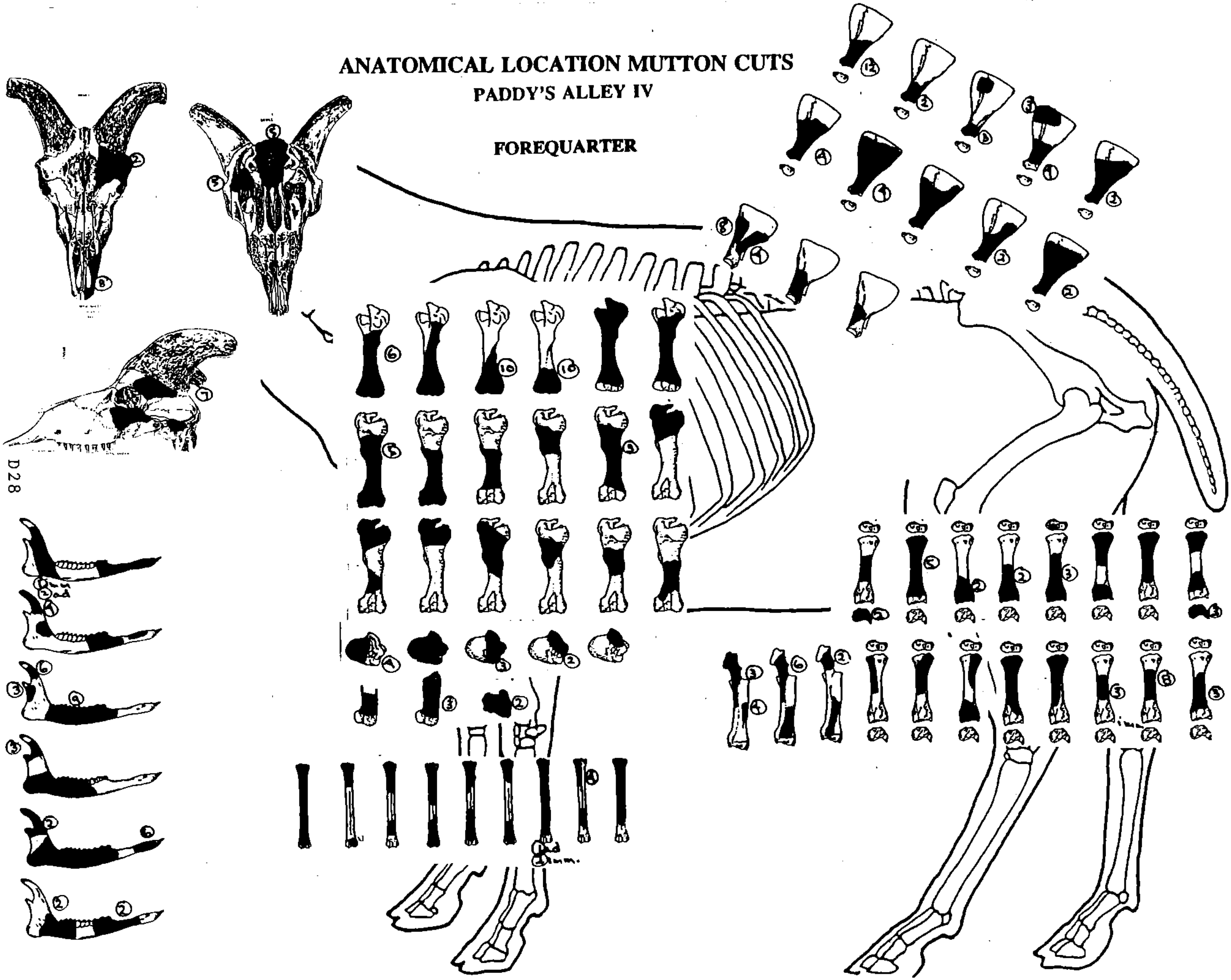
PADDY'S ALLEY IV



ANATOMICAL LOCATION MUTTON CUTS

PADDY'S ALLEY IV

FOREQUARTER



ANATOMICAL LOCATION MUTTON CU…

PADDY'S ALLEY IV

HINDQUARTER