AML Report. 3221

SITE 1186

Carlisle,Fisher Street,1977-Central Unit Excavation 11.

Animal bone report

by James Rackham

The excavations uncovered 4493 bones from a Roman and two Medieval phases of deposits.A small amount of unstratified material was identified but is not reported further.No sieving was conducted on the site and recovery,excepting the few bones found in samples taken for environmental analysis,was made entirely by excavators collecting finds by hand while removing the deposits.

A number of minor excavations have taken place in Carlisle but no published sites or those the author has worked on have produced sufficient material for comparison with the Fisher Street sample, although current excavations are producing much larger samples of medieval and roman animal bones than that considered here.

The remains were catalogued using the Ancient Monuments Laboratory (D.of E.)computer based recording system and the data was processed at the AML on the Honeywell Time Sharing system and on NUMAC (Northumbrian Universities Multiple Access Computer)at Durham.

Contamination:

Many of the Medieval layers on the site contained derived pottery. This contamination by Roman pottery varied in degree from a few sherds up to 89% of the pottery found in individual layers and raises the distinct possibility of Roman animal bones being reworked into Medieval layers.The Medieval layers were therefore broken down into those containing no derived pottery and those that were contaminated,and a comparison of the bone samples was made in order to assess the possibility of contamination by earlier bones.This assessment is assisted by the stratified Roman sample having different species ratio to the uncontaminated Mediaeval sample(Table 2).If the stratified Roman finds can be considered typical then there is no

evidence to suggest that the layers are seriously contaminated.

Roman phase

The sample of bones from the Roman deposits is small,but of sufficient size to indicatethat cattle and ox-sized bones and fragments dominate in the sample(Tables 1 & 2).The sample is too small for further discussion but the bones of each of the main domestic species and the appropriately sized unidentified fragments and the age features of these are tabulated with the Medieval data(Tables 3 & 4).

Medieval phases

The medieval sample contrasts with the Roman in respect to the relative percentages of the domestic animals.Ox in the Roman sample constitute over 80%(Table 2) of the bones of domestic food animals but in the Medieval sample has dropped to 52.4% for both phases together.In this period the bones of pig,sheep and goat become relatively more numerous and can be taken to indicate a change in diet no doubt consequent upon a change in husbandry in the area.In terms of meat supply,beef still made up the major part but to a considerably reduced extent if the samples are representative.

The presence in one area of the phase 1 medieval deposits of large quantities of ox hair,suggested possible comercial activities on the site.The bones from these layers have been tabulated on their own(Tables 1,2 & 3)but neither the species make up,nor the break down of skeletal elements by species gives any clue to this activity but closely resemble the results from the rest of the sample from phase 1.The probability of this deposit being the result of activities on skins or hides alone is to some extent supported by this negative evidence,since de-hairing or other preparation of hides does not introduce any skeletal material.Skinning or slaughtering on the other hand might be expected to have left a sample distinguishable from

the general debris.

The Medieval phase 2 sample is tabulated(Tables 1,2 )but is too small for comment.

The age related characters of the bone finds are tabulated for the Roman and Medieval phase 1 samples(Table4).The cattle bones in all phases characteristically exhibit the adult condition although a few bones derive from juvenile animals.The sheep and goat bones include a larger number from juvenile animals and over fifty percent. of the pig bones exhibit juvenile conditions.

7.2% of the bones from the site have visible evidence of butchery. this is particularly frequent on rib bones and vertebrae,the latter commonly being chopped axially,dorso-ventrally suggesting that the carcasses are split down the backbone.A small number of sawn and cut fragments of red deer antler were recovered from the Medieval layers but not in quantities suggesting a commercial origin rather than reworking or domestic.

Pathological conditions were observed on a number of bones,these included a healed fracture to a small ungulate rib;pitting,porosity and resorption of bone tissue on the jaws of pig and ox and one or two other bones;malocclusion of P4 and M1 on a sheep jaw;and an exostosis on the ventral and dorsal surface of a thoracic vertebra of a large ungulate suggesting advanced osteoarthritis of this region. The P2 was absent from one ox jaw and the last column on the mandibular M3 was missing in two specimens.

Goat bones are certainly underestimated in the tables since the identifications for these were based only on skulls,but the species is also represented by metapodials.The other bones are not easily distinguishable from those of sheep.A further find not recorded on the Table of species is the partial skeleton of a cat from the medieval phase 1 deposits with hair.The skull,much fragmented,and mandibles are present along with other parts of the anterior axial skelton.

Wild species

Both red and roe deer bones aswell as antler occurred in all phases and since some of these were butchered both species were presumably eaten.Of the wild birds blackcock and duck are food animals and the crane and red kite probably town residents.Sparrowhawk bones have been found on a number of sites in this country and are generally taken to indicate the keeping of hawks for falconry.A soil sample from layer 406 produced a number ofphalanges and small limb bones of birds varying in size from a small passerine to a bantam but none of these could be specifically determined.

Measurements

Measurements were taken wherever possible.The sample for any one bone is small so no attempts have been made to test for sexual dimorphism or any comparisons made with other sites.One feature was noted from the measured ox bones.The Roman bones despite the small sample consistently appeared to be larger than the like bones from the Medieval phases,and where individual measurements of a Medieval bone matched those of the largest Roman specimen one was reminded of the possibility of contamination and derivation of bones from Roman levels(see Fig.1).The Roman sheep bones were generally more gracile than their medieval counterparts.Both these comments need to be tested upon much larger samples from the town for verification.

A catalogue of the site and the measurements taken are available from the Ancient Monuments Laboratory and The Biological Laboratory, University of Durham.

Acknowledgements

I should like to thank Dr D.Bramwell for identifying the bird bones and Ms Michele Nation for the considerable time she spent putting together the archaeological information for me.The data was kindly run on the computer by R.Jones of the Ancient Monuments Laboratory.

TABLE 1

Carlisle, Fisher Street, 1977

species catalogue:

| | A | B | C | D | E | F | Total |
|---|---|---|---|---|---|---|---|
| Horse | 4 | 1 | 14 | 9 | | 1 | 29 |
| Ox | 148 | 80 | 367 | 245 | 11 | 7 | 858 |
| Sheep/goat | 15 | 35 | 212 | 115 | 6 | 6 | 389 |
| Goat | | 2 | 7 | 14 | 1 | 1 | 25 |
| Sheep | | 1 | 8 | 5 | | | 14 |
| Pig | 15 | 28 | 112 | 86 | 3 | 2 | 246 |
| Dog | | | 5 | | | | 5 |
| Cat | 1 | 3 | 16 | 13 | | 2 | 35 |
| Red deer | 1 | 4 | 11 | 5 | 1 | | 22 |
| Roe deer | 1 | | 3 | 1 | | | 5 |
| | | | | | | | |
| Fowl | | 12 | 61 | 19 | | 1 | 93 |
| Goose, cf domestic | | 10 | 30 | 16 | 1 | | 57 |
| Duck sp. | | 1 | 4 | 1 | | | 6 |
| Crane, Grus grus | | | | 1 | | | 1 |
| Blackcock, Lyrurus tetrix | | | | 1 | | | 1 |
| Red kite, Milvus milvus | | | 1 | 1 | | | 2 |
| Sparrowhawk, Accipiter nisus | | | 1 | | | | 1 |
| Bird, indet, | | | | | | 26 | 26 |
| | | | | | | | |
| Ox sized frags. | 208 | 228 | 881 | 495 | 47 | 22 | 1881 |
| Sheep sized frags | 21 | 85 | 418 | 189 | 23 | 5 | 740 |
| Unknown frags | 1 | 7 | 24 | 22 | 2 | | 58 |
| | | | | | | | |
| Totals | 415 | 497 | 2175 | 1238 | 95 | 73 | 4493 |

A-Roman phase; B-Uncontaminated Medieval phase 1; C-Contaminated medieval phase 1 (but without D); D-contaminated medieval phase 1 with animal hair; E-medieval phase 2 ; F-unstratified.

TABLE 2
Carlisle ,Fisher Street,1977

Species-fragment percentages:

| | A | | B | | C | | D | | E | |
|---|---|---|---|---|---|---|---|---|---|---|
| Horse | 1.0 | 2.2 | 0.2 | 0.7 | 0.6 | 1.9 | 0.7 | 1.9 | | |
| Ox | 35.7 | 81.3 | 16,1 | 54.4 | 16.9 | 51.0 | 19.8 | 51.7 | 11.6 | 52.4 |
| Sheep/goat | 3.6 | 8.2 | 7.0 | 23.8 | 9.7 | 29.4 | 9.3 | 24.3 | 6.3 | 28.6 |
| Goat | | | 0.4 | 1.4 | 0.3 | 1.0 | 1.1 | 2.9 | 1.1 | 4.8 |
| Sheep | | | 0.2 | 0.7 | 0.4 | 1.1 | 0.4 | 1.0 | | |
| Pig | 3.6 | 8.2 | 5.6 | 19.0 | 5.1 | 15.6 | 6.9 | 18.1 | 3.2 | 14.3 |
| Dog | | 99.9 | | 100 | 0.2 | 100 | | 99.9 | | 100.1 |
| Cat | 0.2 | | 0.6 | | 0.7 | | 1.0 | | | |
| Red deer | 0.2 | | 0.8 | | 0.5 | | 0.4 | | 1.1 | |
| Roe deer | 0.2 | | | | 0.1 | | 0.01 | | | |
| | | | | | | | | | | |
| Fowl | | | 2.4 | | 2.8 | | 1.5 | | | |
| Goose,cf domestic | | | 2.0 | | 1.4 | | 1.3 | | 1.1 | |
| Duck,sp. | | | 0.2 | | 0.2 | | 0.01 | | | |
| Crane,Grus grus | | | | | | | 0.01 | | | |
| Blackcock,Lyrurus tetrix | | | | | | | 0.01 | | | |
| Kite,Milvus milvus | | | | | 0.04 | | 0.01 | | | |
| Sparrowhawk,Accipiter nisus | | | | | 0.04 | | | | | |
| | | | | | | | | | | |
| Cx sized fragments | 50.1 | | 45.9 | | 40.5 | | 40.0 | | 49.5 | |
| Sheep sized fragments | 5.1 | | 17.1 | | 19.2 | | 15.3 | | 24.2 | |
| Unknown | 0.2 | | 1.4 | | 1.1 | | 1.8 | | 2.1 | |
| | 99.8 | | 99.9 | | 99.78 | | 99.55 | | 100.2 | |

Carlisle, Fisher Street, 1977-Table of skeletal element by species: Roman phase

| | Ox | K | Pig | S/G | N |
|---|---|---|---|---|---|
| Horn core | | 1 | | | |
| Skull | 37 | 13 | | 1 | 2 |
| Maxilla | | | | | |
| Max.teeth | 1 | | | | |
| Mand.teeth | 1 | | 1 | | |
| Jaw | 8 | 14 | 3 | 3 | 1 |
| Atlas | 2 | | | | |
| Axis | 3 | | | 1 | |
| Cervical V. | 1 | 1 | | | 1 |
| Thoracic V. | | 9 | | | |
| Lumbar V. | | 9 | | | 2 |
| Sacrum | 1 | | | | |
| Caudal V. | | | | | |
| Ribs | | 86 | | | 7 |
| Scapula | 14 | 10 | 1 | | 2 |
| Humerus | 5 | 4 | 2 | 1 | |
| Radius | 8 | 1 | 1 | | |
| Ulna | 4 | | 2 | 1 | |
| Carpi | | | | | |
| Metacarpus | 10 | | 3 | 3 | |
| Innominate | 10 | 1 | 1 | 1 | |
| Femur | 2 | 1 | | 1 | |
| Tibia | 6 | 5 | 1 | 1 | 1 |
| fibula | | | | | |
| Tarsi | 2 | | | | |
| Astragalus | 1 | | | | |
| Calcaneum | 12 | | | | |
| Metatarsus | 13 | | | 2 | |
| 1st phalanx | 6 | | | | |
| 2nd phalanx | 1 | | | | |
| 3rd phalanx | | | | | |
| Unknown | | 83 | | | 5 |

Table 3.

Carlisle, Fisher Street, 1977-Table of skeletal elements by species: Uncontaminated Medieval phase1

| | Ox | K | Pig | S/G | N |
|---|---|---|---|---|---|
| Horn core | | | | | |
| skull | 19 | 5 | 5 | 1 | 5 |
| maxilla | | | | | |
| Max.teeth | 3 | | | 1 | |
| Mand.teeth | 6 | | 3 | 5 | |
| Jaw | 4 | 2 | 5 | 2 | 1 |
| Atlas | 1 | | | 1 | |
| Axis | | | | | |
| Cervical V. | | 5 | | | 1 |
| Thoracic V. | | 10 | 1 | | 3 |
| Lumbar V. | | 11 | | | 5 |
| Sacrum | | | | | |
| Caudal V. | | | | | |
| Ribs | | 83 | | | 32 |
| Scapula | 2 | 2 | 1 | 2 | 4 |
| Humerus | 1 | 1 | | 1 | 1 |
| Radius | 4 | | | 4 | |
| Ulna | 1 | | 2 | | 1 |
| Carpi | | | | | |
| Metacarpus | 5 | | 2 | 2 | |
| Innominate | 5 | 2 | 2 | 4 | |
| Femur | 3 | 1 | 1 | | |
| Patella | | | | | |
| Tibia | 6 | 1 | 3 | 2 | 6 |
| Fibula | | | 1 | | |
| Tarsi | | | | | |
| [illegible]alus | 3 | | | | |
| [illegible] | 4 | | | 1 | |
| | 5 | 1 | 2 | 9 | |
| | 5 | | | | |
| | 5 | | | | |
| | | 103 | | | 24 |

Carlisle, Fisher Street, 1977-Table of skeletal elements by species: Medieval phase 1 contaminated

| | Ox | K | Pig | S/G | N |
|---|---|---|---|---|---|
| Horn core | | | | | |
| skull | 38 | 21 | 10 | 21 | 4 |
| Maxilla | | | | | |
| Max.teeth | 29 | | 2 | 16 | |
| Mand.teeth | 20 | | 6 | 19 | |
| Jaw | 26 | 4 | 10 | 23 | 2 |
| Atlas | 4 | 3 | | 2 | |
| Axis | 6 | | 1 | 6 | |
| Cervical V. | | 20 | 2 | | 3 |
| Thoracic V. | | 33 | 2 | | 18 |
| Lumbar V. | | 33 | | | 8 |
| Sacrum | 2 | | | | 2 |
| Caudal V. | | | | | |
| Ribs | | 263 | | | 125 |
| Scapula | 13 | 11 | 8 | 8 | 9 |
| Humerus | 9 | 3 | 6 | 8 | 1 |
| Radius | 21 | | 8 | 10 | 1 |
| Ulna | 5 | | 8 | 6 | |
| Carpi | 6 | | | | |
| Metacarpus | 22 | | 13 | 13 | |
| Innominate | 16 | 9 | 7 | 19 | 2 |
| Femur | 16 | 6 | 3 | 4 | 2 |
| Patella | 3 | | | | |
| Tibia | 18 | 8 | 10 | 10 | 12 |
| Fibula | | | 1 | | |
| Tarsi | 3 | | | 2 | |
| Astragalus | 15 | | 3 | 3 | |
| Calcaneum | 12 | 2 | 1 | 4 | |
| Metatarsus | 25 | | 8 | 23 | |
| 1st phalanx | 26 | | 1 | 14 | |
| 2nd phalanx | 16 | | 1 | 1 | |
| 3rd phalanx | 12 | | | 1 | 1 |
| Unknown | 4 | 465 | 1 | 1 | 228 |

Carlisle, Fisher Street, 1977-Table of skeletal elements by species: Medieval phase 1 with hair

| | Ox | K | Pig | S/G | N |
|---|---|---|---|---|---|
| Horn core | | | | | |
| skull | 38 | 16 | 9 | 8 | 2 |
| Maxilla | | | | | |
| Max.teeth | 12 | | 2 | 8 | |
| Mand.teeth | 10 | | 2 | 8 | |
| Jaw | 16 | 6 | 7 | 13 | 1 |
| Atlas | 3 | | 1 | | |
| Axis | 1 | | | | |
| Cervical V. | | 11 | 1 | | 1 |
| Thoracic V. | 1 | 23 | 1 | | 6 |
| Lumbar V. | | 25 | | | 11 |
| Sacrum | 4 | | | | |
| Caudal V. | | | | | |
| Ribs | | 189 | | | 92 |
| Scapula | 9 | 6 | 5 | 7 | 7 |
| Humerus | 9 | 1 | 12 | 4 | 1 |
| Radius | 11 | | 6 | 9 | |
| Ulna | 3 | 1 | 11 | 4 | |
| Carpi | 1 | | | | |
| Metacarpus | 17 | 2 | 6 | 10 | |
| Innominate | 11 | 4 | 1 | 7 | 1 |
| Femur | 11 | 5 | 2 | 6 | |
| Patella | | | | | |
| Tibia | 10 | 4 | 9 | 9 | 11 |
| Fibula | | | 2 | | |
| Tarsi | 4 | | 1 | | |
| Astragalus | 7 | | 1 | 1 | |
| Calcaneum | 13 | | 1 | 3 | |
| Metatarsus | 19 | | 6 | 11 | 1 |
| 1st phalanx | 17 | | | 8 | |
| 2nd phalanx | 7 | | | 1 | |
| 3rd phalanx | 6 | | | | |
| | | 202 | | | 55 |

TABLE 4

Age related characters of the bones of Ox, Sheep(& goat) and Pig.

| | Ox/Rom | | Ox/Med 1 | | S/G/Rom | | S/G/Med 1 | | Pig/Rom | | Pig/Med 1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U | F | U | F | U | F | U | F | U | F | U | F |
| M1 and indet | | 2 | | 25 | | | | 9 | | | | 1 |
| Scapula tuberosity | | 8 | | 11 | | | | 10 | | | | 1 |
| Pelvis, main bones | | | | | | | | | | | | |
| Canine(pig) | | | | | | | | | | | | 2 |
| Humerus, dist.epiphysis | | 2 | | 9 | | 1 | | 10 | | | 2 | 7 |
| Radius, prox.epi. | | 5 | | 18 | | | | 11 | | | 1 | 7 |
| 1st phal.prox.epi. | | 5 | 2 | 42 | | | 6 | 16 | | | 1 | |
| 2nd phal.prox.epi. | | 2 | | 29 | | | | 2 | | | 1 | |
| Incisors | | | | 9 | | | | 1 | | | | |
| Metacarpus, d.epi. | | 4 | 1 | 21 | | 2 | 6 | 4 | | 2 | 10 | 4 |
| Tibia, dist.epi. | | 2 | 1 | 26 | | | 1 | 16 | 1 | | 11 | 3 |
| M2 | | 1 | | 19 | | | | 27 | | 1 | | 6 |
| P2 and indet.premolar | | | | 1 | | | 1 | | | | | 1 |
| P3 | | | 2 | 9 | 1 | | 6 | 2 | | | | 4 |
| Metatarsus, d.epi. | 2 | 5 | 2 | 23 | | | 5 | 13 | | | 10 | 2 |
| Calcaneum, prox.epi. | | 7 | 7 | 16 | | | | 8 | | | 1 | |
| P4 | | 1 | 1 | 18 | | | | 12 | | 2 | | 6 |
| Fibula, dist.epi. | | | | | | | | | | | | |
| Incisors(pig) | | | | | | | | | | 1 | 4 | 6 |
| Ulna, prox.and dist.epi. | | | 1 | 1 | | | 3 | 4 | | | 7 | 2 |
| Femur, prox.epi. | | | 1 | 8 | | | 1 | 2 | | | | |
| Radius, dist.epi. | 1 | 2 | 3 | 14 | | | 4 | 6 | | | 4 | |
| Femur, dist.epi. | | | | 8 | 1 | | 2 | 3 | | | 1 | |
| Tibia, prox.epi. | | 4 | 2 | 5 | | 1 | | 3 | | | 8 | |
| Humerus, prox.epi. | | | 1 | 3 | | | 1 | 2 | | | 1 | |
| M3 | | 6 | | 28 | | 2 | 1 | 34 | 1 | | 3 | 9 |
| Fibula, prox.epi. | | | | | | | | | | | 1 | |
| Vertebral epiphyses | | 2 | 1 | 3 | | | 1 | 3 | | | 6 | |

U-unfused or unerupted; F-fused or erupted;
The table is arranged so that the bones are listed in their approximate order of fusion or eruption.

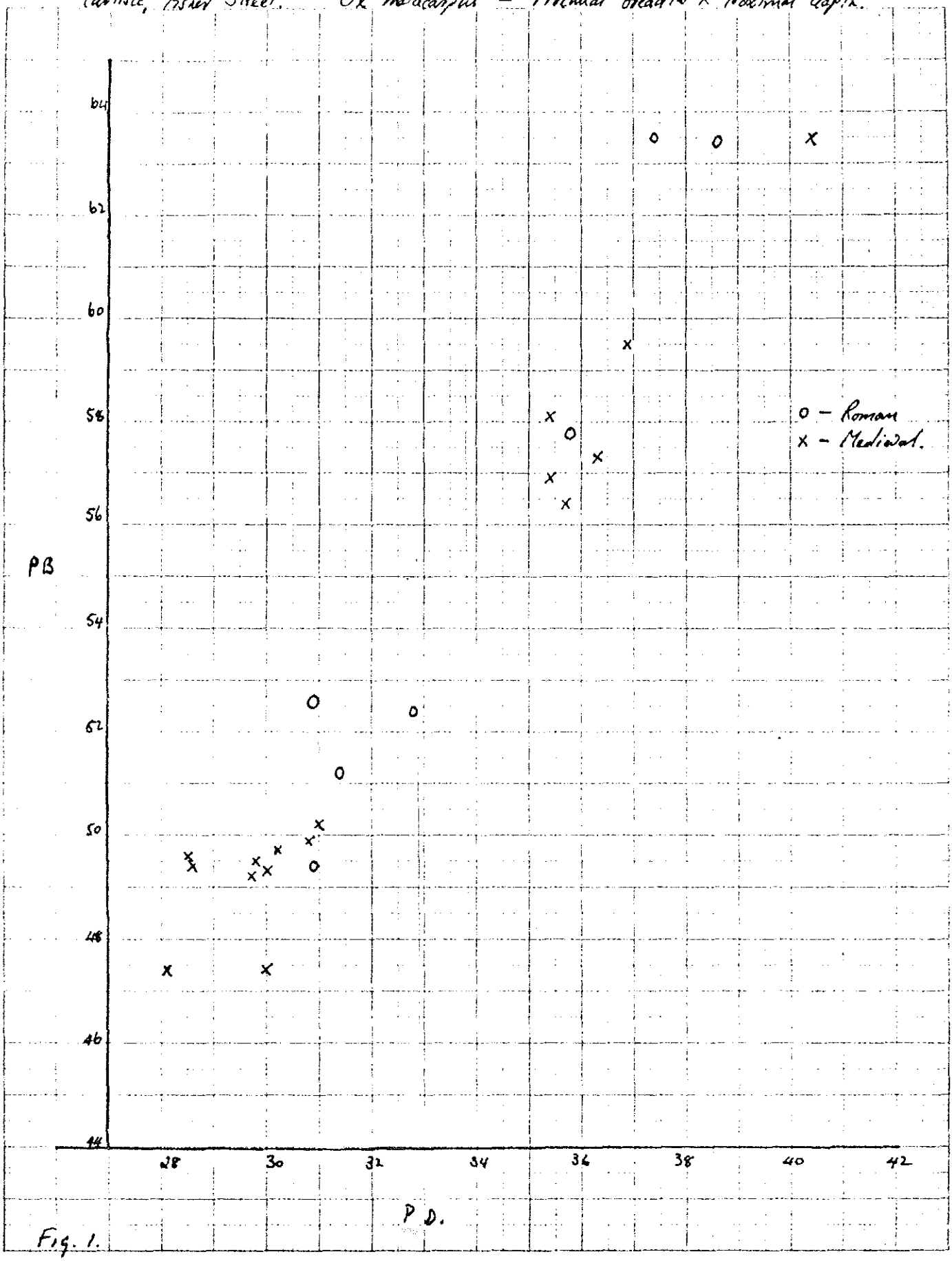
Carlisle, Fisher Street. Ox metacarpus – Proximal breadth × Proximal depth.
64
62
60
58
56
54
52
50
48
46
44
PB
28
30
32
34
36
38
40
42
PD.
o – Roman
x – Medieval.

Fig. 1.