ANCIENT MONUMENTS LABORATORY

REPORT

1525

SERIES/No	CONSULTANT
AUTHOR	F A Turk
TITLE	NOR NOUR, Animal Remains Isle of Scilly

NOTES ON CORNISH MAMMALS IN PREHISTORIC AND HISTORIC TIMES: 4

F. A. TURK

A report on the animal remains from Nornour, Isles of Scilly

This issue of the present series of notes is given up to what amounts to an interim report on the bone remains from the last two seasons' excavations on Nornour, Isle of Scilly. A previous paper of the author's[1] has dealt with the bones discovered during the excavations conducted by Miss Dorothy Dudley from 1962 to 1966[2] and a general account of the site and of the excavations which recovered the material on which the present report is based was published by Miss Marnia Butcher last year[3]. The context in which these bones were found appears to be that of the pre-Roman Iron Age and an entirely provisional dating suggests that they might correctly be placed soon after 250 B.C. – a chronology of some significance for at least one species. In the period between this and my last report on the bones of this site another paper has appeared dealing with various species recovered from the midden material by hand sorting about one cubic foot of the black granular earth[4]. The joint authors, Sandford and Cornett, deal mostly with the vole *Microtus oeconomus* and the significance of its occurrence in the islands but give additional records of several species previously noted and a new record of the Scilly shrew *Crocidura suaveolens*, as well as some bird species not on previous lists. These will be noticed, in passing, in the present paper.

OX

This species is much more common in this material than it was in that excavated by Miss Dudley from 1962 to 1966; indeed, a glance over the register of bones shows that it was present in almost as many of the numbered bags as the sheep. Assuming that both lots of material are of roughly the same age, the explanation of this discrepancy is very uncertain. In the bones from the midden on Gwithian dating from the 2nd to 6th Centuries A.D.[5] the Ox was also much commoner than in Miss Dudley's pre-Roman Iron Age material from Nornour. One was tempted to see this as an increase in the numbers of the species in Scilly and a shift, during those centuries, in the general pattern of animal husbandry: the present material obviously casts considerable doubt on such an explanation. However, further deduction must await a firmer dating of these bones as, indeed, of the whole Nornour complex.

Few bones unfortunately allow of measurement. The majority of the long bones show some signs of having been split into two longitudinally, presumably to extract the marrow and, for this reason, as well as for the fact that only a few bones survive in a form from which any reconstruction of the living animal can be made, we are still partly ignorant of what the

breed would have been like. Certainly it was Iornese, for a few fragments of horn-cores survive and equally certainly it was very much smaller than modern cattle. Even so, a few bones, such as the radius show measurements, the magnitude of which in some specimens is not greatly below many modern breeds. The size of the teeth and a few fragments of mandible and maxilla suggest that it had a disproportionately large head, whilst vertebral fragments suggest a small body with possibly slim, underdeveloped hind-quarters. The knees were abnormally large in mature animals - possibly more so in the bulls than the cows - and certainly disproportionately so to the locks. Horn-cores suggest that the horns had a variable curvature and were often small but could indeed develop great length and considerable curvature[6] as shown by fragments from the midden on the S.W. of House I.

The remains, taken as a whole, appear to come from animals of all ages and there is no evidence of young calves having been slaughtered, as in the case of the lambs, to avoid taking them through the winter. One or two bones, indeed, seemed to come from animals of considerable age and this suggests that these cattle were kept very much as in former times in the Hebrides. Mountt(l.c.see note 6) says of them "In the spring all the cattle are in poor condition. .....sea-weed boiled with husks of grain and a little meal..... are then only used to support them: and in many places the cattle during the winter and spring regularly betake themselves to the sea-shore at ebb-tide to feed upon the fuci." In the richer Scillies and especially in view of the variety and amount of mammalian life the islands then supported, it seems very likely that a similar practice would have been followed. This small, tough, unimproved breed - probably few mature individuals would have weighed above four hundredweight[7] - would have been pre-eminently suited to such a husbandry[8]. Perhaps the most nearly related surviving breeds were the ancient oxen of Shetland[9] and Orkney - somewhat ill-shapen like the latter and, maybe, a little larger than the former. It was undoubtedly a variant of the widespread stock of the "Celtic ox" found at all Iron Age sites both British and Continental and the most distinguishing osteological feature that I can find for the Scillonian breed, from the bone fragments available, is that the frontal bone had a very small supra-orbital foramen and a supra-orbital fossa deeper, and more sharply defined, than seems to be figured for any other known breed ancient or modern. However, as this is a character totally unrecorded for many races of oxen its diagnostic value must remain extremely tentative. — Ajm!

Measurements of Ox bones

Teeth length M_1:35.5. 37.5. M_2:28.0, 29.5. M_3:33.0, 36.0, 38.5 (average of three for this ~~tooth~~ modern oxen gave 40.0)

P^4:27.0. P^2:26.0. P^3:30.

Humerus max. distal br. 53.0. 73.0

Ulna width ant. art. surface 33.5.

Radius Max. ant. prox. surf. 64.5. Max. distal art. 63.5.
Metacarpal prox. max. bi-lat. distal max. 56.0 (max. 35.0)

Phalanx I	Length 56.0.	prox.width 30.0.		distal 19.5.
	29.0	21.0		16.0
Phalanx II	Length 41.5	prox. -		distal 29.0
	" 62.0	-		-
Scapho- cuboid	max.width 43.0mm.	max. height 44.0 mm.		
	" " 49.5mm.	" " 33.0 mm.		
Astragalus	Length 51.5	max. prox. 32.0	max. distal	-
	" 54.0	" " 36.0	" "	34.0
	" 59.0	" " 38.0	" "	36.0

GOAT

For sources used in distinguishing sheep and goat bones see footnote 1 to part 3 of these notes. As previously all bones not identifiable as goat are treated as "sheep". As in the material from the earlier excavations the remains of this animal are extremely few. Numbers must have been very few throughout this period and all the evidence points to a small unimproved breed of scrub goat possibly semi-feral.

Mandible Length of tooth row 49.0mm. without M_3, Length Pm_2 9.5mm." 15.0mm
Depth mandible ant. to P_2 17.5mm. depth ant. to Pm_1 14.0mm.
(M_3 not yet erupted. Age of animal about 1 year 3 months).

A fragment of a mandible, a broken prox. piece of an ulna and a distal fragment of humerus are the sole remains of the species.

Humerus Max. width distal condyle 27.0mm.

SHEEP

Although, as in the previous Nornour report (Turk.l.c), the bones of this species are the most numerous yet because of their fragmentary condition they add little to the description of this species previously given (Turk 1968). Yet a further small characteristic can be added. A fragment of the orbital rim of the malar bone shows that the orbit itself was produced to a somewhat abnormal extent and the whole region very well marked. However, the tentative suggestion put forward in that report that a larger breed may be present is more firmly attested by certain of the remains now available. A metacarpal and a metatarsal of a juvenile animal (both bones lacking epiphyses) were of somewhat deer-like facies, slim and elegant and of a length equal to those of many modern breeds. There is now evidence therefore for an abnormally short-legged Turbary type sheep and for a much larger, longer and slender legged breed. Possibly also, there is further evidence that this breed might have carried much longer, backward curved, heavy horns as remains of such cores were found in the lower midden material infilling the passage between the complex of Houses I and II and House III. In the basal section these horn cores are almost completely D-shaped whereas all the horn cores of the smaller and much more common Turbary type sheep are obscurely triangular but approximating to a broad ovoid shape at the base[10].

A further matter of considerable interest must claim attention; this has come to light by employing the method of least numbers[11]. The least numbers[12] of animals that could be represented by the girdle and limb bones present are as follows:-

	Mandible	14 individuals)		All bones from animals of all ages are counted equally for this purpose. If one excepts very young animals the femora and tibiae would represent still smaller numbers proportionately.
	Scapula	9	"	
Fore-limb	Humerus	15	")	
	Radius	15	")	
	Metacarpals	23	")	
	Pelvic bones	2	")	
Hind Limb	Femur	8	")	these often do not survive well in my experience.
	Tibia	6	")	
	Metatarsals	14	")	

Assuming that the local conditions did not favour the differential preservation of one lot of bones compared with another, and not a single fact is known contrary to such an assumption, then this startling (???) difference in numbers of the hind as compared with the fore-limb can only mean that the "leg of mutton" (or lamb), in modern butchery terms, was frequently traded or gifted away outside the community - the metatarsals mostly being detached first - whereas the "shoulder of mutton" was usually kept for home consumption. Obviously it is unlikely that this practice would have taken place among the islanders themselves because a) it seems reasonable to assume that in such a confined geographical area all the inhabitants would keep the same animals and have a nearly identical economy and b) if this did take place for any reason of ritual or social exchange one should expect to find the bones of the hind-limbs of the sheep with nearly equal frequency in the midden material or among the infilling of the huts. As far as is known the sheep unlike the ox, boar and dog had no ritual significance for the Celtic people[13] and on this account alone there seems no particular reason why the best cut of the mutton should have been used for such purposes. Accordingly, we appear to be left with only one explanation, namely, that it was given or traded to visitors from overseas[14].

Too elaborate.

Sheep bones were certainly used for the making of implements. A distal part of a juvenile tibia and the proximal part of a radius had been cut across obliquely and worked to a point to form awl-like instruments. Of more delicate work was a pierced disc of bone cut from a sheep's scapula - probably an immature animal. It had an average diameter of 45.0mm with a minimum thickness of 2.2mm. A somewhat similar disc which appears to have also been cut from a scapula was found at Jarlshof[15], another wheel-house culture site.

Measurements of Sheep bones

Teeth: Length: M_3 21.0 (as large as modern breeds) M_1 11.5 (very old animal)
M_3 20.0mm. M^1 10.5 M^2 14.0 M^3 14.5

Mandible Total length: 140.0mm. Length of tooth row 67.5mm.
" 149.0mm. " " " " 63.5mm. (mod. 60.0mm)

Length of condyle to symphysis 155.. Height of ...

(An animal of at least . years [illegible] had only [illegible] -3 and M_1 erupt.
In this instance the length of tooth row was [illegible]7.0. Depth of jaw
ant. to Pm_1 6.5, ant. to M_1 18.5).

<u>Scapula</u> Length of glenoid cavity 26 - 24 - 23.

<u>Humerus</u>

Length	prox. end	distal end
-	-	25.0
-	-	24.5
126	30	26.5
		23.0
		27.5
		25.5

<u>Radius</u> None could be measured for length.

Prox. width	Distal width
	24.75
26.5	-
24.0	
	22.5
24.5	25.0
23.5	

<u>Femur</u> Max. across head and greater 40.0mm.

Length	Trans. diam. prox. extremity	Distal width
153.5	-	3[illegible].0
-	-	30.5
-	4[illegible].5	34.0

<u>Tibia</u> None could be measured for length.

Prox. width	Distal width
37.0	28.5
37.0	25.0
37.0	24.5

<u>Astragalus</u>

Length	Prox. width	Distal width
26.5	18.5	16.5
26.0	19.0	18.5
25.0	-	-
25.0	-	-
27.0	18.0	17.5
26.5	19.0	18.0
26.0	17.0	16.5

<u>Calcaneum</u> Length 52.5 - 48.5 - 48.0 - 41.0 - 47.0 - 53.0 - 55.0

<u>Metacarpal</u> Length 110.0mm.) (large as Distal width -
Length less epiphysis 111.0) modern breed) " " 22.0

<u>Metatarsal</u> Length 121.5 Prox. width 17.0 Distal width 20.0
Length less ep. 114 juv. - -

<u>PIG</u>

The remains of this species are as rare as that described in my earlier report. From site [illegible] (East) came part of the squamous portion of the occipital with the nuchal crest and an abaxial metacarpal. The general impression one gains from the former is of a <u>very small breed</u> (? dwarf island race) of a type not to be distinguished from the wild swine. The abaxial metacarpal is only 34mm. long: this should be compared with that of a modern domestic breed which I have been able to measure and which has a length of 6[illegible] m.

Also from site D (East) came a single Phalanx II without epiphyses and representing a very young animal, correspondingly small. It still seems best, at present, to consider the Mornour pig as a semi-feral animal as suggested in my former paper (Turk 1967).

HORSE

This species did not occur in the material from the earlier excavation carried out by Miss Dudley but the last two years work have revealed a very few remains which, although they prove the undoubted presence of this animal do not, in fact allow it to be characterized except in the most general terms. Two very damaged rib fragments, a small fragment of the maxilla and another of the mandible as well as a few teeth are all that represent it. It was small, to judge by the teeth no bigger than a medium sized ass and the enamel pattern of the teeth is much simplified and reduced. Pm^3 has the protocone well developed but approaching a true circular shape whilst the metaconule is so reduced as to be almost absent. The protoconule on the other hand is well developed into a pendant, smoothly rounded lobe. The parastyle is rather poorly developed, pointed and strongly embayed. The pre fossette and post-fossette have an obliquely placed, small super-numary fossette developed between them. Other teeth have extremely simple enamel patterns and the single individual seems to have been relatively young. All the remains of the horse came from the eastern section of the midden on Site D.

Measurements of Teeth Pm^3 31 x 26 M^1 22.5 x 24.5 and 21.0 x 23.5 M^2 26 x 16 M^3 20.5 x 20.0 Pm_2 18 x 13 M_2 28.0 x 0.0 M_3 36.5 x 15.5

RED DEER (Cervus elaphus)

Handford and Pernetta (loc. cit.) found "six incisors and two foot bones" of this species and in my earlier paper on the bones from the Nornour site (Turk 1968) I recorded fragments of the tines of this species and some minute fragments of other bones tentatively ascribed to the Red Deer and a smaller species. From Site E Strip 5 came several fragments of Red Deer Antler but unfortunately these were too small to allow of reconstruction of the whole, however a basal fragment with the burr or coronet showed a maximum diameter at the base of 50mm. The only comparative material I have to hand is a 13-pointer which had a maximum diameter of the burr of 66mm. It is notable that the antler fragments so far seen do not suggest very good development such as one might find in true woodland and maybe argue for an animal existing in open scrub. Also from Site E strip 1/2 (suggesting that it may have been part of the same animal as the antlers) was a piece of the proximal end of a metacarpal (max. width 41.5mm.) which was found together with a number of burnt broken bones which may, or may not, have been deer bones. Still another, isolated burr came from the East of Site D. This was smaller measuring only 46mm. in max. diameter, it therefore seems reasonable to assume that, at least, two animals are represented. Finally, at the east end of the midden was found a small fragment of a cervine long bone which had been cut across by Man.

? ROE DEER (Capreolus capreolus)

There is growing evidence that another species of deer is present in Scilly. As I have already published a note on this[16] it need not be repeated now. Those bones, discovered by A. Alec Gray in 1935 at Halangy, St. Mary's, included some which the British Museum expert at that time (? W.P. Pycraft) reported to be "a small species of deer probably Roe". Mr. Gray tells me that the pottery suggested a Middle Bronze Age context. From the Normour site come several remains which are almost certainly of this species. A metatarsal bone, without epiphyses, was referred to the Roe. It is long and slim with lateral flattening and deep grooves on the anterior and posterior faces. The total length without the epiphyses measured 150.5mm., with the proximal extremity 34mm. wide and the distal 35mm. It is probably reasonable to assume that, with epiphyses this bone was overall, between 160 and 165mm.; since it was obviously immature this would compare with the length given by Huc[17] for the same bone, namely, 185mm. From the S.W. exterior of House I in the Midden material came the distal fragment of another metapodial (believed metatarsal). This too had no epiphysis and gave a distal width of 32mm. and, in general characteristics, agreed well with Roe. There are two other fragments of bone, more tentatively assigned to this species, which came from the East End of the midden on site D. Dense and heavy they are parts of the shaft of what is probably a tibia. One fragment has been cut across and the other appears to have been crushed with a blow from a stone like many of the bones of other species, presumably to extract the marrow.

A few other bone fragments believed to be those of Deer because they are whitish, very dense exceptionally heavy and slim, have been retained for further study. There is now firm evidence for the Red Deer in Scilly in the Bronze to Romano-British periods and almost certain evidence of the Roe. Handford and Pernetta (l.c.) believe these could only have been introduced into the islands by Man but I shall hope to examine the whole question of these insular deer in a later paper. What is certain is that we are not dealing here with the mere importation of antlers for tools but with whole animals both adult and young.

GREY SEAL (Halichoerus grypus)

Bones of this species are slightly more common than those of the Ox and only a little less common than the Sheep bones, occuring in over three quarters of all the sample bags. Individuals of all ages are represented although adult males, so far as could be ascertained, are rare. Several of the long bones show signs of having been cut, a very few have been worked into tools - especially radii which are made into awl-like implements - and the great majority of the rest have been crushed. No facial and very few anterior cranial bones have been found and this, I believe, supports the suggestion made in my former paper that the animals were slaughtered by aiming blows at the forehead of the seal. Many bullae have been

recovered and almost all of these show evidence of having been fired as do most mammalian fragments and the cervical vertebrae. The neck and shoulders of the adult seal, especially those of the adult male, are covered with large accumulations of blubber and it therefore seems certain that this region of the body was usually separated from the rest and the fat melted down to give the inhabitants their supplies of oil. Judging by the abundance of the coal remains great quantities of oil, both from this source and from certain of the sea birds, must have been available to the inhabitants for lighting the interiors of the huts.

WHALE

Against the exterior of House I was found a fragment of a mandible with 5 teeth, part of a vertebra, fragments of ribs and a digit. These appear referable to the Common Dolphin (Delphinus delphis) a species only slightly rarer than the porpoise at the present time in these seas. From Strip 1 on Site E came the post part of the cranium, five metacarpals and a tooth of a Cetacean. These were not such as to make a specific identification possible but, again, they could have belonged to the Dolphin. During the 1969 excavations a fragment of a Cetacean vertebra was recovered from the midden on the S.W. exterior of House I and from the Upper midden came part of the right occipital and condyle and part of the basioccipital bone of a whale. The former did not agree completely with a similar fragment of a Risso's Dolphin which I picked up on a beach on the Isles of Scilly, many years ago but the similarities are such as to lead one to think that these remains too belong either to the Common Dolphin or to Risso's Dolphin.

Cetacean remains are not at all common at this site and it is difficult to believe that whales were ever systematically hunted by the inhabitants: it would appear rather that these bones result from chance strandings such as still take place in the islands. No doubt all such carcasses were rendered down for oil.

LARGE VOLE (Microtus oeconomus)

This is apparently the vole referred to in my former paper on Mornour as M. arvalis. Mr. Ian Linn made that identification in the absence of mandibles and made a reservation then that it might, just possibly be the present continental species. Sandford and Bernetta (loc. cit.) found no less than six left and 12 right mandibles together with associated palates and numerous limb bones and upper incisors. At this time I had also discovered five mandibles among the bones excavated by Miss Butcher in 1969 and had independently come to the conclusion that the vole was indeed M. oeconomus. The species is one quite unlooked for at such a period in these islands and Sandford and Bernetta believe that it was introduced by Man in early post-glacial times - a conclusion to which I have some reservations preventing immediate agreement. Mr. Linn and I

plan to make this the subject of a joint publication in the near future.

LONG-TAILED FIELD MOUSE (Apodemus sylvaticus) and FIELD VOLE (Microtus agrestis) are both recorded by Handford and Fernetta as occurring in the material they examined. They are mentioned in passing merely to make the faunal list complete for this site. I have myself never found remains of either species among the bones submitted to me from Nornour. It is difficult to be certain that these are contemporaneous with the Iron Age A context of the other remains for they might indeed be later intrusions in these soils. The Wood Mouse makes underground runs on occasion and it is possible that, like the Red-toothed shrews, the Scilly Shrew may have made use of such runs as well as those of the Vole.

BIRDS

Bird bones are present in unusual quantities at almost all parts of the site. It has not been possible as yet to identify all of them, partly because many are too fragmentary and partly because I have not had access to a sufficient range of comparative material. However, most have been retained for further study. Because of the considerable importance which attaches to many of these records those that have been identified with reasonable certainty are given here.

? RAVEN (Corvus corax)

A skull fragment from Site I seems referable to this species although the identification is not certain[14]. It also occurred in the previous Nornour excavations (Turk loc. cit.).

? SKYLARK (Alauda arvensis)

A humerus and other fragments of bone were tentatively identified as this species. Handford and Fernetta (loc. cit.) had a similar provisional identification of two femora.

CORMORANT (Phalacrocorax carbo)

From the West End of the Midden came a femur of this species and from Site E a fragment of the occipital portion of the skull. It is difficult to believe that these birds could have been eaten and would provide only limited quantities of oil. It is possible that they were trained for fishing.

GANNET (Sula bassana)

In the upper filling of House III was a Tarso-metatarsus of this species and from the upper midden of the Passage came the head of a femur which seems to be that of the Gannet and fragments of other bones which may belong to this species. The paucity of the remains does not argue a gannetry in the area although such are known to have existed in former times in Cornwall and the S.W. generally. Unlike the position at some Scottish pre-Roman and later sites where the inhabitants seem to have relied largely on this species for supplies of oil, those of Scilly appear to have had to make more use of other sea birds, particularly the Razorbill[15].

COOT (Fulica atra)

The distal fragment of an ulna and the head of a humerus are referable to that of a coot but no certain identification could be made of the species nor whether it was in a wild or domestic. It is worth noting in passing that several large avian ulnae were found which appear to have been split across obliquely and sharpened to a point, perhaps thus serving as an awl.

DUCK (? Clangula clangula)

A broken tibio-tarsus from the upper midden was doubtfully identified as Golden eye but may have been another species of duck of similar size.

WHITE STORK (Ciconia ciconia)

The distal end of a tarso-metatarsus was so identified with "reasonable certainty" by Sandford and Bernetta (loc cit.). I have a fragment of a humerus from Site K that, with some small reservation, is also to be ascribed to this species. at least, I can find no other west European bird species that it resembles.

? WADER

A humerus and part of a tibio-tarsus of a small wader, perhaps this species, were found in the upper infilling of House III. Among the bird bones not yet identified several seem to belong to other species of waders which, as a group, make up in number of bones the second most numerous group of avian remains. Sandford and Bernetta record a wader the size of an Avocet.

RAZORBILL (Alca torda)

Certainly the commonest of all bird species found at this site. Many hundreds must have nested on the low cliffs of Hicly in the early centuries B.C. and doubtless it was more common than the Guillemot that usually prefers higher cliffs. Like that species it no doubt provided the inhabitants with meat, feathers and oil and eggs (see Turk 1968).

GUILLEMOT (Uria aalge)

The remains of this bird are only a little less numerous than the foregoing. Two skull fragments were taken from the midden.

PUFFIN (Fratercula arctica)

This species has been by no means as commonly found in this material as in that from the earlier excavations on Mornour (see Note 2). A metacarpus was found with remains of several other bird species in the upper midden material infilling the passage. Sandford and Bernetta record an ulna and fragments of radius. It is difficult to account for this discrepancy in numbers from the two excavations. It might be caused by some short-term fluctuation in the size of the breeding population. For further remarks on this species see Turk 1966.

SHEARWATER (Puffinus puffinus)

The posterior part of the skull of this species came from Site K together with fragments of other bones that almost certainly belong to the same individual. Another fragment of a skull - the top portion of a cranium -

and an ulna of this species. The freshwater is seemingly very seldom found at pre-historic sites on the western European littoral. No doubt it occurred in considerable numbers, as it does today, and the presence in this material represents the exploitation of its abundance and accessibility in the immediate environment. It might well have provided much oil[20] but it is very doubtful if it was eaten.

PUFFIN (Lundix arctica)

A tarso-metatarsus of this species and bone fragments, probably belonging to the same individual, came from the upper filling of House III. It is not uncommon in european palaeolithic and some neolithic material but is to be accounted a rarity in an Iron Age context. It did not occur at Jarlshof but bred on the isle of Samson, Scilly, up to less than two decades ago; although Todd[21], quoting Borlase, rightly says that it seems to have been introduced there a little before 1752.

BLACK GROUSE (Lyrurus tetrix)

From the Western end of the Midden (Site 1), in a pocket of black soil under small stones, was found the distal part of a humerus and the tibio-tarsus of this now rare species. It has become extinct on the Cornish mainland in recent years but was widespread in the county until the early 19th. century. There are very few records of the species at any Iron Age sites throughout Europe and at Jarlshof it is not found until the Viking levels are reached. It seems probable - although this is impossible to substantiate from one individual only - that this bird might have bred in Scilly in former times. In Europe it frequents, for choice marshy ground with rushes and scattered bushes, sphagnum covered moors and rocky outcrops surrounded by heather, all of which are extremely likely to have occurred in Scilly some two millennia ago.

DOMESTIC FOWL

In the upper midden of the Passage occurred the tarso-metatarsus of this species. The bone is seemingly almost identical with that figured by Krajer (fig. 16)[22]. That author compares the bones of the domestic fowl of Roman times at Mandalenberg in Austria with those described by Schweizer[23] from the La Tene oppidum at Manching and finds that, in the La Tene breeds, the secondary sex characteristics were much less strongly marked. It is not possible to base an assessment of this on one bone but it will be interesting to discover if further bone material favours an attribution to the later breeds or the earlier. It seems likely that, over a couple of centuries or so, a breed not unlike a small muscovy was selected and stabilised by the La Tene people. At Jarlshof the domestic fowl does not appear until the early 9th. century.

In addition to these species Radford and Fernette include a firm record of the Song Thrush and a tentative one of the Wren.

Fish bones are commonly found throughout the Normour site but few of these have yet proved possible to identify. A fair degree of certainty appertains to those given below:-

CONGER (Conger vulgaris)

Vertebrae of this species occur at three parts of the site and some seem to suggest large individuals. In British waters the conger is known to attain a length of at least 9 feet and weigh 160 lbs. The largest of those from Normour might possibly represent 6ft. specimens.

WRASSE (Labrus sp.)

Teeth of this fish and some vertebrae occur in the midden material but have not been much more frequently found than in the earlier excavations (Turk 1968). Since it is common on rocky shores the paucity of the remains suggests that the inhabitants did not rank it very highly as a good fish.

LING (Molva molva)

This has been positively identified by comparison with recent bone material and is not uncommon at most parts of the site. Some very large specimens indeed seem to have been taken perhaps 5 to six feet in length. It is still not uncommonly caught on long lines.

BASS (Morone labrax)

The vertebrae of this species are common in some samples and absent in others. Its presence undoubtedly marks the season May to August and I hope, in the near future, to undertake an analysis of associated bones to discover any evidence of seasonal variation in the diet of the inhabitants.

POLLACK (Gadus pollachius)

Vertebrae of this species are widely distributed on the site. I have seen none which suggest a size above 5 or 6 lbs.

? HAKE (Merluccius vulgaris)

A clavicle of what is tentatively identified as this species is the only bone in the collection, so far as is known, which can be adduced as evidence of its use by the Iron Age population.[24]

TURBOT (Rhombus maximus)

The species is represented by a dentary bone, numerous vertebrae and possibly other bones not yet certainly identified. It is fairly commonly found in shallow water (3 to 10 fathoms) and its presence here suggests, very definitely, that there must have been fairly extensively developed shallow sandy bays in Scilly during the Iron Age.

? PLAICE (Pleuronectes platessa)

A smaller flatfish believed, but not proven to be this species, occurs fairly frequently. The vertebrae match those of Plaice more closely than any other comparative material available to me. Specimens of this species do not seem to have been above 7 or 8 inches long, perhaps because the larger individuals move away to deeper waters in the summer.

One important conclusion may be drawn from these fish records; apart from the Hake, none are deep-water species. This might

[illegible]

[illegible] has kindly identified the shells found on the site. They are included here to give a complete inventory of the animal remains so far discovered.

[illegible] (Ostrea edulis)

This species has long been used for human food and, in places, for bait in fishing. The shells have been used, in remote fishing communities and until quite recent times, as lamps[25]. Moderately common on Normour.

[illegible] (Venus verrucosa)

It has been used up to the 19th. century as food in the Island of Herm and in County Clare.

[illegible] (Ostrea edulis)

Found only from Strip 5 Site E. It does not now occur living in Scilly although single valves are occasionally washed up. Attempts were made to introduce it for cultivation in Scillonian waters in the last century but these proved unsuccessful.

[illegible] (Littorina littorea)

Not very commonly found in the material. One would suppose it too small to be eaten.

[illegible] (Nucella lapillus)

This is still eaten by Scillonians as a substitute for the edible periwinkle under which name it is often collected.

COMMON LIMPET (Patella vulgata)

The most plentiful of all shells in the midden, but not so commonly occurring as in the material from the earlier excavations on this site. Two of the shells, both badly abraded, may have belonged to the closely related species P. ferruginea.

[illegible]

1. [illegible] Report on the Animal Remains from Nornour. J.[illegible] (n.s.) V. Pt. IV (1968).
2. [illegible] in [illegible] Journ. Vol. 124 (1968) pps. 1–64.
3. Butcher, S.A. Excavations at Nornour, Isles of Scilly 1969–1970 Interim Report. Cornish Archaeology No. 9. (1970) pps. 77–87.
4. [illegible] J.C. and [illegible] Mammalian and Avian Remains from possible Bronze Age deposits on Nornour, Isles of Scilly. J. Zool., Lond. (1970) 162, 534–540.
5. Turk, F.A. Notes on Cornish Mammals in Prehistoric and Historic Times: 1 Cornish Archaeology Vol. 7 (1968) pps. 73–79.
6. It is interesting that William Youatt ("Cattle: their breeds management and disease" London 1833) describes a breed of small black aboriginal Irish cattle some of which had thick heads and necks and were generally somewhat deficient in the hind-quarters. The same author also describes a small black Cornish breed, still present in small numbers on the western moors of the county in his day. He says "they are small, black, with horns rather short, very coarsely boned, with large offals, and rarely weighing more than three or four hundredweight. They bear an evident resemblance to the native breeds of Wales and Scotland." This might well be a good enough general description of the pre-Roman Scilly breed for it is in keeping with such osteological characters as are known but, at the same time, the Scillonian breed of pre-historic times undoubtedly had certain likenesses to the old Welsh cattle in their lack of symmetry (suggested by some bone fragments) and the variability of the horns. They would, of course, have been much smaller than the Welsh breeds. In this connection see "British Breeds of Live Stock" Min. Agr. and Fisheries (3rd. ed. 1920).
7. Welsh steers sometimes weighed over 15 cwt. and Dexters (a derivative of the small Kerry breed of Ireland) just over 6½ cwt.
8. Youatt (l.c. supra) speaking of the Hebridean cattle quotes from a Mr. Garnet's "Tour through the Highlands", written seemingly at the end of the 18th. century, to the effect that, very often, the cows were brought into the huts of the crofters in winter and shared the stock of meal with them, "while the cattle, thus sustained, are bled occasionally to form nourishment for the children after the mingled oatmeal and blood has been boiled and made into cakes".
9. Miss M.I. Platt in Report on the Animal Bones from Jarlshof (in J.R.C. Hamilton Excavations at Jarlshof, Shetland: Edinburgh 1956. pps. [illegible]–215) says that, at that site, "from the earliest times a small ox was present resembling the typical Shetland ox of today together with a larger type". If indeed, the fragments of rather disproportionately large radii recovered from the Nornour site are those of a different breed then the situation was identical with that at Jarlshof. However, I can find no other evidence

homogeneous race. Dr. . Jewell says ("Cattle from British Archaeological Sites" in Mourant A. E. and Zeuner, F. E. "Man and Cattle" Roy. Anth. Inst. Symposium 1963. pps. 80-91) "It is important to realise, however, that cattle of a moderately large size persisted throughout the whole of this period and occur together with the Celtic Ox". On an isolated island such as Scilly the position may well have been different. Nevertheless until larger parts of the skull are available for study and more complete horn-cores and metapodials, little more can be safely said about the Scillonian ox of Iron Age times.

10. It is entirely possible that these cores are the posterior horns of a 4-horned breed of sheep or at least one in which 4-horned individuals occasionally occur. The Manx sheep, a breed known as the loghtan (? Celtic "lugh-dhoan" (mouse dark)) produces 4-horned rams as may be seen in those living today at Cregneash. Our leading authority on the history of sheep breeds, Dr. M.L. Ryder, has stated ("Jacobs Sheep" Newsletter 63. Commonwealth Bureau of Animal Breeding and Genetics, Edinburgh 1969) that there is a tendency for all the short-tailed island sheep on the littoral of western Europe to have more than a single pair of horns. The probability of this applying to those of Scilly is therefore high. It is increased by the fact that the posterior horns are often goat-like and swept upward and backward, as are these. However, there are other skeletal remains giving evidence of a larger breed and these unusual horns might well have belonged to this, both by reason of size as of formation.

There is one, more remote, possibility namely that the cross-section might suggest that they belonged to the goat. However no cranial bones are attached to them and the horn characters given by Dr. I.W. Cornwall (Bones for the Archaeologist. London 1956 p. 73) for distinguishing these two species have not seemed to me very reliable in practice.

11. For a simple description of this method and of somewhat similar findings from a Saxon site at Whitehall, London, see Chaplin, R.E. "The use of non-morphological criteria in the study of animal domestication from bones found on Archaeological Sites" pps. 231-245 of Ucko. J. and Dimbleby, G.W. "The domestication and exploitation of plants and animals" (London. Duckworth and Co. 1969).

12. It must be clearly understood that in such a context as this, the "least number" is a pure abstraction and bears no relation to the actual numbers represented by the bones which were probably a very little less than double.

13. There was indeed an ancient Irish festival, Imbolc, believed to have marked the beginning of the ewe's lactation but this does not at all argue any particular supernatural status for the animal (see Powell, T.G.E. "The Celts" London 1958).

14. As is well known there is good evidence of frequent trading between the Land's End/Scilly area and Marseilles in the fragment of a Periplus by Pytheas (circa. 330 b.c.) and somewhat weaker evidence for a sea-borne trade between Cadiz and West Cornwall.

15. See Hamilton, J.R.C. Excavations at Jarlshof, Shetland. Min. of Works Arch. Rep. No. 1. Edinburgh 1956 page 71 Fig. 37 No. 7.

16. Turk, F.A. Notes on Cornish Mammals No. 2. Ann. Rep. Roy. Corn. Polytechnic Soc. 1960 (pps. 42-49).

17, Hue, E. Musée Ostéologique. 2 vols. Paris 1907 Librairie C. Reinwald Schleicher Freres, Editeurs.

18. This is almost certainly not a species used for food. As is well known, the Raven was part of an Earth cult with the Celtic peoples and is associated with the god Lug. For such information about this bird as cult hero see Armstrong, E.A. "The Folklore of Birds" (Collins, London 1958).

19. Dr. J.R. Ritchie (Animal Life in Scotland. Camb. Univ. Press 1920) page 171 says "The inhabitants of the Bass Rock in the beginning of the 19th. century were accustomed to obtain 10 gallons Scots of oil drawn from the Solan". A gallon Scots is 3.00651 of an imperial gallon. Again on p. 146 "No bird could well have been more useful to the St. Kildans than the Gannet or Solan Goose whose oil and feathers were of inestimable value, and whose carcasses to the number of over 20,000 were preserved annually for winter fare." This illustrates the heavy reliance placed by such island communities on birds. Judging by the numerous avian remains from Mornour such a situation could only have been a little less developed there.

20. This community must have had an unusual abundance of animal oil available to them. The seal, chance strandings of whales and many of the seabirds recorded would have been constant sources of supply. Mixed with a little sea-salt to make a more yellow flame it would no doubt have had considerable properties as an illuminant. It seems to me surprising that this small community found it necessary to produce so much: in the absence of any mining it would be likely that it was greatly in excess of their no doubt otherwise modest needs and one is led to hazard the guess that it may have been traded.

21. Rodd, E.H. "The Birds of Cornwall and the Scilly Isles" (London 1880). The point is, of course, that the species has maintained itself for over 200 years in the islands and there is therefore no reason to suppose it was not a breeding bird in Iron Age times.

22. Dräger, N. Tier Knochen funde aus der Stadt auf dem Magdalensberg bei Klagenfurt in Kärnten. 1. Die Vogel Knochen. (Kärntner Museumsschriften vol. 33 Klagenfurt 1964. pps. 7-54). During the Roman times at this Austrian site the remains of the Domestic Fowl made up 78.4% of all the bird bones and Dräger gives an excellent account of its variation and lists all continental records to the

time of publication. The late Prof. E.S. Hyman in "A History of Domesticated Animals" London 1963 (. 491) says "It may be assumed that the British fowl had not had a long history when the Romans encountered it. Caesar mentioned expressly that the Britons would not eat it, and the finds made so far show that this bird was not common." In fact, Caesar in his "Commentaries" says "They (i.e. the Britons) do not regard it as lawful to eat the hare, cock or goose: however, they breed them for amusement and pleasure" (Book V chap. XII). The word used in the text is nefas which I take to mean here something like 'an impiety, an abomination or a sin'. If this is correct the bird may have had a cultic significance for the Iron Age people. If the tentative dating given for the Mornour site proves to be correct, then this occurrence of the Domestic Fowl in Scilly is certainly the earliest record of the species in the British Isles.

23. Schweiger, H. Zur Fruhreschichte des Haushuhns in Mitteleuropa. Studien an vorund fruhreschichtlichen Tierresten Bayerns 9. (Munchen 1961). This contains the most extensive study yet made of Iron Age poultry. Although it deals with central european finds it has much that is relevant to Western Europe.

24. The Pike does not usually occur in the sites of coastal settlements in Northern and Western Europe until the early Middle Ages. It is a markedly deep-water species and its presence appears to mark the possession of remarkably sea-worthy craft and considerable navigational skills. There is nothing in the list of fish from Mornour (apart from one clavicle) to suggest that the inhabitants ventured far from the shore at all, indeed all the species could have been caught (but probably were not) from the shore.

25. Lovell, W.G. "The Edible Mollusca of Great Britain and Ireland". London 1867. All the notes appended to the molluscs are from this work.