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The faunal remains from the neolithic contexts at Casalmoro (S. Maria Segreta, Mantova)

ABSTRACT

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The Author presents the results of the studies of the material from three late Early Neolithic pits brought the light at Casalmoro on the western bank of the river Chiese in the Po Valley.

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This site lies on the west bank of the river Chiese on the Po plain. The material discussed here is probably of late early neolithic date. The archaeological data for this period at Casalmoro have been discussed by Biagi and Perini (1979). The site was the subject of rescue excavation in advance of quarrying. A small sample of faunal material was recovered from three contexts. The material is stored at the Museo di Remedello.

A total of 235 bones was found. The degree of fragmentation and weathering was fairly severe. There was more fragmentation in pit I than in contexts II and H (that is the unit weight in pit I was less than in contexts II and H). In terms of the number of fragments, most material was present in pit I and least in pit II. However, in terms of the weight of bone present, there was most material in context H and least in pit II. Only 24,2% of the fragments could be identified to the species level. Between contexts this figure was quite variable (that is from 18,1% in pit I to 38,3% in pit II). Approximately 10% of the sample was composed of ribs and vertebrae. These bone types were not present in pit II.

A range of animals was found: cattle, sheep/goats, pigs, red deer, roe deer, beaver and hare. The number of fragments of each species may be

seen in table I. Cattle, sheep/goats and pigs were the only species which were present in significant numbers. Domestic animals constituted 82% of the identified sample. Overall pig bones were most numerous, followed by those of sheep/goats and then of cattle. There is some variation between each pit in the material recovered. Wild animal bones are, with the exception of one fragment, found only in context II. The three major domestic species are found in each unit although, as can be seen in table 1, the proportions of each vary. In contexts II and H sheep/goats are dominant. In context I pigs are most common, followed by cattle and then sheep/goats.

The calculation of proportions based on the number of fragments is open to much criticism. Two further methods of quantification may be used. The minimum number of individuals count eliminates such biases as different numbers of bones for each species, different potential amounts of fragmentation, variations in the use of animals, and post-depositional fragmentation. The figures have been calculated initially on one of two bases:

1. the greater number of left or right of any one tooth type, when at least half of the tooth is present in each case.
2. the greater number of left or right of the proximal or distal epiphysis, or of a diagnostic portion of the shaft, of any bone.

Considerations of age, sex and stature also have to be included in both cases. Two sets of results are given for each species. The first assumes that each unit is an individual sample. That is, the figure has been calculated for each context

and the numbers added together. The second assumes that the sample is one entity. That is, the bones of one animal could be found in more than one context. The figures are shown in table 2. The proportions of the species are similar to those seen for the number of fragments.

The relative proportions of the three major species in terms of the potential contribution to the meat supply is shown in table 3. The figures used for the meat provided by each individual are those calculated by Cram (1967) for Roman animals in Great Britain. Although not necessarily valid in absolute terms, they are of use in determining relative proportions. Cattle could have provided the bulk of the meat required although pigs were also of some significance. Sheep/goats were of only slight importance.

The more precise anatomical composition of the sample is given in table 4. The bone types present in each context and the bone types present for each species are listed. A range of elements was present. Little significant patterning could be observed in the data. The only exception to this is an absence of the bones of the lower parts of the limbs (that is metapodials, carpals, tarsals and phalanges) for cattle.

Stock can be raised for products other than meat. From sheep/goats and cattle one can obtain milk, and from sheep, wool. After death the hides of goat and cattle may also be used. Such practices should be revealed by the population structure of the herd or flock. The calculation of the age is based upon the fusion of the limb bones and upon the dental eruption sequence (Silver 1969). Further evidence may be gained from the amount of wear on each tooth (Grant 1975, 1982). Unfortunately the mortality data from this sample are extremely few and inconclusive (table 5). It is therefore not possible to determine the stock exploitation strategies implied by these data with any certainty.

The measurement of bones may be of use for determining the precise species, the sex, and the general nutritional standard of an animal. Very few bones could be measured. The available data are given in table 6. They are comparable to others taken of material of similar date from northern Italy (Barker 1983).

It was not possible to distinguish sheep from goat nor to determine the sexual composition of the sample. Two fragments of bone had been worked: a piece of red deer antler is probably a spatula, and a fragment of a long bone (of red deer or cattle in all probability) is part of a point. Both were found in context II.

In brief, the subsistence regime seems to have been based upon the integration of cattle, pigs and sheep/goats, each being present in similar numbers. At this neolithic site wild animals appear to have been of little subsistential importance. Their remains are concentrated in one pit. This may be indicative of a different function or different date for this pit. Given the ways in which the material was recovered (Biagi and Perini 1979, 17) this cannot be investigated further. Cattle were probably of critical importance as a meat source whilst sheep/goats were probably kept principally for their secondary products. Pigs may have been killed to supplement the meat supply at times of scarcity.

To conclude I shall briefly compare this sample with those from other sites within the region, studied by Barker (1976, 1977, 1983), of earlier neolithic date. As has been noted by Biagi and Perini (1979) there are problems in the precise dating of this site and in the interpretation of the relationship between this site and others in the region. In broad terms the material from Casalmoro is of similar date to that from Vhò (Campo Ceresole) and Ostiano (Dugali Alti). Barker (1983) has shown that the subsistence strategies of these sites depended above all on forest fauna and, in particular, red deer and roe deer. The major domestic species were present but only in small amounts. Cattle were probably kept at Vhò and Ostiano for breeding, perhaps for milk, and also for meat. However, they did not form the critical basis of the meat supply, as is inferred from the Casalmoro material. Sheep/goats were bred for their primary and secondary products but no importance was attached to this species. For Casalmoro it was suggested that sheep/goats were maintained primarily for secondary products. The exploitation of pigs may have been similar at all sites.

Therefore, it is clear that the economic strategy at Casalmoro was totally dissimilar to those prevailing at Vhò and Ostiano. It is unlikely that this was caused by different resource availability as all sites are located within a similar ecological zone: that is on the Po plain, close to rivers and marsh land, with an abundance of mixed oak forest. It seems more likely that the hypothesis presented by Biagi and Perini (1979) of Casalmoro being occupied towards the end of the early Neolithic (that is, at a later date than Vhò and Ostiano) is confirmed by the faunal material as well as by a C14 date from Berlin laboratory, Bln-2975:5810 \pm 60 bp (3860 bc) (Quitta pers. comm to P. Biagi, 1984). Although dissimilar to the material from

Vhò and Ostiano, the sample from Casalmoro is strikingly similar to that from Casatico di Marcaria (Barker 1979, 56-62), a middle neolithic site. This similarity can be seen not only in the relative proportions of species raised, but also in the manner of exploitation.

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	I	II	H	Total
cattle	7 36,8%	3 33,3%	2 10,5%	12 25,5%
sheep/goat	3 15,8%	4 44,5%	9 47,4%	16 34,0%
pig	9 47,4%	2 22,2%	8 42,1%	19 40,5%
red deer		4	1	5
roe deer		2		2
roe deer/sheep/goat		1		1
beaver		1		1
hare		1		1
Total identifiable	19	18	20	57
Ribs and vertebrae	10		12	22
Unidentifiable	76	29	52	157
Total	105	47	84	236
Percentage identifiable	18,1%	38,3%	23,8%	24,2%

Table 1 - Casalmoro (neolithic): the sample in terms of the number of fragments.

	Meat weight multiplication factor	F	MNI(1)	MNI(2)
CATTLE	226 kg	67,8%	72,2%	61,1%
SHEEP/GOAT	27 kg	10,8%	8,6%	14,6%
PIG	45 kg	21,4%	19,2%	24,3%

Table 3 - The proportional meat weight of the major species.

Key: F - number of fragments; MNI (1) - minimum number of individuals based on the individual units; MNI (2) - minimum number of individuals based on the cumulative sample.

	Total	I	II	H	Cattle	Sheep/ goat	Pig	Red deer	Roe deer	Roe deer Sheep Goat	Beaver	Hare
ANTLER	1	—	1	—	—	—	—	1	—	—	—	—
MANDIBLE	8	5	2	1	3	3	1	1	—	—	—	—
MAXILLA	1	1	—	—	—	—	1	—	—	—	—	—
TEETH	16	3	4	9	2	4	8	—	—	—	1	—
SKULL	5	2	—	3	1	2	1	—	—	—	—	—
SCAPULA	4	—	2	2	1	—	3	—	—	—	—	—
HUMERUS	3	2	1	—	2	—	1	—	—	—	—	—
RADIUS	6	1	3	2	1	2	1	1	—	—	—	1
METACARPAL	1	1	—	—	—	1	—	—	—	—	—	—
PELVIS	2	1	1	—	—	—	1	—	1	—	—	—
TIBIA	5	1	2	2	1	2	—	1	—	1	—	—
ASTRAGALUS	2	2	—	—	2	—	—	—	—	—	—	—
METATARSAL	3	—	2	1	—	2	1	—	—	—	—	—
PHALANGE 1	1	—	1	—	—	—	—	—	1	—	—	—
PHALANGE 3	2	1	—	1	—	—	1	1	—	—	—	—

Table 4 - Anatomical elements for each context and for each species.

FUSION				DENTITION	
more than				more than	
CATTLE				5-6 months	1
SHEEP/GOAT				3-5 months 9-12	1
PIG	1 year 2 ¹ / ₄	1 1	17-22	4-6 months 7-13	1 1

Table 5 - Morality data.

	1.	2.	3.
CATTLE ASTRAGALUS ASTRAGALUS	64,4	37,7 36,2	68,6
SHEEP/GOAT METACARPAL METATARSAL	20,4 20,7	14,7 20,6	
PIG MANDIBLE RADIUS	39,9 32,1	25,1	
ROE DEER MANDIBLE	14,8	36,2	23,2

Table 6 - Metric data

The following measurements were taken in millimetres:

Mandible: 1. maximum length M3; 2. maximum length M3-M1; 3. maximum length P4-P2.

Radius: 1. maximum width proximal epiphysis; 2. maximum thickness proximal epiphysis.

Metacarpal: 1. maximum width proximal epiphysis; 2. maximum thickness proximal epiphysis.

Astragalus: 1. maximum length lateral side; 2. maximum thickness lateral side, measured from baseline to anterior side; 3. maximum length medial side.

Metatarsal: 1. maximum width proximal epiphysis; 2. maximum thickness proximal epiphysis.

SUMMARY

The faunal material from three Neolithic pits, one of which is dated to 3860 ± 60 bc, is presented in detail. The sample from this site shows strong similarities with that of Casatico di Marcaria, a middle Neolithic Square Mouth Pottery settlement recently excavated in the central Po Valley.

RIASSUNTO

L'Autore presenta i materiali provenienti da tre pozzetti databili alla fine del Neolitico antico, sulla base dei reperti della Cultura materiale, uno dei quali ha fornito una datazione radio-carbonica di 3860 ± 60 bc. L'insieme dei materiali faunistici è ben più ravvicinabile a quelli del Neolitico medio, Casatico di Marcaria ad esempio, che non a quelli di tipo Vhò, documentati nello stesso areale.