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Wharram Percy: The Nave of the Church - Report on the Human Skeletal Remains (Level 4)

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1. Introduction

Inhumed human bone from 50 recorded burials in the nave of the church at Wharram Percy was examined (Bell p.). Many of the burials had been disturbed and a great deal of sorting of the material was necessary (details of this are given in the archive report). For the purposes of much of this report the subdivisions into Nave East and Nave West were used for ease of analysis. Results showed that there were a minimum number of 35 individuals in the Nave East and 41 individuals in the Nave West. The population sample therefore amounted to 76 individuals. If the graves from which no bones were lifted are assumed to have contained one individual each then there were four further individuals in Nave East, four in Nave West and two in the Chancel giving a total sample of 86. Since this report was concerned with the skeletal remains the actual figure for those examined was used (ie,76).

Preservation of material varied from poorly preserved fragments to virtually complete skeletons. Table 1 below shows the overall results for the two areas of the nave and for the whole sample. Obviously the terms used of "good", "fair" and

"poor" preservation were approximate, although in general a skeleton in good condition was also complete. Further details by individual are given in the MF and a full record of the bones and teeth present is kept in the archive.

Table 1: Bone Preservation in the Nave

Bone Preservation	Nave East	Nave West	Total (%)
Good	7	8	15 (20)
Fair	8	8	16 (21)
Poor	20	25	45 (59)
	35	41	76 (100)

Although the figures suggested that the sample was on the whole poorly preserved this in fact reflected the large number of disturbed burials present which were all very fragmentary. There was no significant difference observed between the Nave East and the Nave West. It was possible to make detailed observations on many of the skeletons (including age and sex).

The material was examined for details of demography (age and sex), stature, skeletal and dental morphological and metrical variables and health (dental and bone pathology). Analysis of the morphological and metrical variables was not included here since this was undertaken primarily with a view to the study of the whole Wharram Percy population sample; it will be included in a later report.

2. Demography

Observations for the age and sex of each individual were made wherever possible. Details of the methods used and the results by individual are included in the MF .

2.1. Sex

Table 2 below gives the sex distribution for the Nave East and West and the whole sample. Attribution of sex was either probable (male/female), possible (?male/?female) or impossible. The last category included adult individuals for whom data were unavailable and infants, juveniles and sub-adults. Sexing was not attempted for individuals other than adults since many of the secondary sex characters that are used are observable only on mature, fully-grown individuals. It is possible to make an assessment of sex on an immature skeleton but the reliability of such methods is generally estimated at around 50% (see in particular Krogman 1962). Since this is equivalent to guesswork it was not felt to be a justifiable proposition here.

The accuracy of sexing varies greatly with the method employed and the preservation of the remains. All attributions of sex on unknown population samples are relative, thus the best that can be achieved is a probable statement of sex. The reasons for this lie principally with the nature of the sample: ie.

there are no medical or historical records for the individuals and since the soft tissues are absent the only evidence is the skeletal remains (hence the use of the term "unknown population sample"). The practice of using comparative results obtained from other skeletal population samples, particularly for metric methods, adds a further margin of error. In order to make an allowance for this, where feasible, more than one method was used for sexing each individual. This may help to compensate for the fact that most sexing methods involve using a single bone to attribute sex but the aim is to sex the individual not the bone. For the nave of the church at Wharram Percy 51 individuals (67%) were probably sexed (with more than one method and approximately 90-95% accuracy), 12 individuals (16%) were possibly sexed (with one or more methods and approximately 80-90% accuracy) and 13 individuals (17%) could not be sexed. This was a fairly good result, particularly if it is remembered that 59% of the remains were poorly preserved.

Table 2: Distribution by Sex, The Nave of the Church (Adults)

Sex	Nave East	(%)	Nave West	(%)	Total	(%)
Male	13	(37)	18	(44)	31	(41)
?Male	4	(11)	2	(5)	6	(8)
?Female	2	(6)	4	(10)	6	(8)
Female	8	(23)	10	(24)	18	(23)
-	8	(23)	7	(17)	15	(20)
	35		41		76	

The results for sexing in the nave of the church provided two main points of interest: the male:female ratio and

the distribution. It was noticeable that there was a much higher proportion of males present throughout the area. The reason for this may in part be the limitations of the methods used for sexing (as discussed above) or burial practice. Weiss (1972) suggested that in any series of skeletal remains there is an inherent bias towards sexing as male because so many of the secondary sex characters used are based around the greater size and robusticity of the male. Whilst this is certainly a consideration, as already stated 67% of individuals here were sexed by several methods and of these for 49% pelvic morphology was one of the variables used and this is least affected by skeletal robusticity. Further, allowance was made for possible bias and it is suggested that overall it was not a significant factor in the male:female ratio. The alternative explanation is that differential burial practice led to the inclusion of a greater number of males in the nave. No comment can be made on this until the results for the whole Wharram Percy population sample are available for comparison.

The distribution of the burials by sex between the Nave East and the Nave West showed that the proportions were practically the same for both areas (see Table 2). This may indicate that there was no separation by sex at burial or may merely reflect an artificial barrier between the Nave East and Nave West. A preliminary examination of the burial pattern for the whole nave suggested that there was indeed a random distribution by sex.

2.2. Age

Table 3 below gives the age distribution for the Nave East and West and for the whole sample. Age estimates are given here as being within a five-year range. This was done for the purposes of statistical comparison with data from other samples in order to standardize the information. However the accuracy of ageing does vary; generally it may be said that accuracy decreases as age increases. Thus with infants it is possible to limit individuals to the period "birth" to six months and for individuals up to about twelve years accuracy within three years is feasible. For adults a range of five years is the best that can be achieved, there being many fewer parameters available for assessing age. Further beyond the age of c.50 years even the five-year limit is lost, hence the large group in the bracket 50+ years. It should be noted that there is a microscopic method of ageing that may be employed for elderly individuals (Ubelaker 1978) but this was not considered justifiable for the present sample.

Table 3: Distribution by Age, The Nave of the Church

Age	Nave East (%)	Nave West (%)	Total (%)
0-5	4 (11)	3 (8)	7 (9)
5-10	1 (3)	2 (5)	3 (4)
10-15	- (-)	1 (2)	1 (1)
15-20	1 (3)	1 (2)	2 (3)
20-25	3 (9)	4 (10)	7 (9)
25-30	- (-)	5 (12)	5 (7)
30-35	2 (6)	3 (8)	5 (7)
35-40	3 (9)	1 (2)	4 (5)
40-45	- (-)	1 (2)	1 (1)
45-50	4 (11)	1 (2)	5 (7)
50+	8 (23)	9 (22)	17 (22)
Adult	9 (26)	10 (24)	19 (25)
	35	41	76

The results for age showed a fairly even distribution throughout the nave of the church. Comparison of the data showed that as with the results for sex there was no significant difference between the Nave East and the Nave West.

Figure 1 is a mortality curve for the nave of the church. Curves were also drawn to compare Nave East and West but since there was no significant difference observed between them the sample was considered as a whole. It illustrates mortality (number of deaths) for each five-year period as a percentage of the whole sample. Those individuals that could be aged as "adults" only were excluded from this analysis; sample size was

therefore 57. The curve highlighted three peaks of mortality, 0-5 years, 20-25 years, and 50+ years. This was the sort of pattern which might have been expected for this period (ie. high perinatal and young adult mortality) however there were a number of points to be raised. The first and most important was the small size of the sample. This was such that the observed pattern of the mortality curve, although that which might have been expected, could have been merely coincidental. Thus it was possible that actual mortality at Wharram Percy followed a very different formation. Further it is a common failing of such curves that they become distorted through individual under-enumeration, particularly of infants. At this point it is impossible to discern whether this was indeed the case with the Wharram Percy material, results for the rest of the sample will be needed before that can be established. Finally it should be pointed out that there was one obvious bias visible on this mortality curve, caused by the inclusion of all individuals over the age of 50 years in one group. This suggested that mortality was very high over that age but in fact if the material were to be divided into five-year periods then probably there would be an approximately even distribution similar to that shown up to that level.

A survivorship curve is the reverse of that for mortality. It shows the number of survivors at the end of each 5-year period expressed as a percentage of the whole sample. Figure 2 is a survivorship curve for the nave of the church at

Wharram Percy. As for mortality comparison of the Nave East and West showed no significant differences therefore the material was considered all together. The curve showed a steady decline in the number of survivors with increases in the gradient of the curve from 0-5 years, 20-25 years and 45-50 years. This reflected the pattern of the mortality curve but it also emphasized the even decrease in the number of survivors at other ages. It also provided much better representation of longevity in the sample with 30% of the sample surviving to 50 years or more. This figure was not subject to bias from grouping all individuals over that age together and suggested a fair length of life in the sample. It should be noted that the survivorship curve is, like the mortality curve, subject to distortion from individual under-enumeration. Further the sample size was small and the results for the rest of Wharram Percy are needed for comparison and analysis.

Some preliminary investigations comparing the mortality and survivorship at Wharram Percy with other samples were undertaken but it was decided not to include the results here, rather to wait for the analysis of the whole site.

2.4 Sex and Age

A comparison was made of the sex distribution by age and the results are listed below. However the sample size from the Nave was so small that further analysis could not be justified at this stage.

Table 5: Sex Distribution by Age, The Nave of the Church

Age	Male	?Male	?Female	Female	All (%)
20-25	5	-	-	1	6 (10)
25-30	4	-	1	-	5 (8)
30-35	2	-	-	3	5 (8)
35-40	3	1	-	-	4 (6)
40-45	-	-	-	-	- (-)
45-50	4	-	1	-	5 (8)
50+	6	2	1	6	15 (24)
	24	3	3	10	40 (65)

Note: The percentages given here are of the total number of adults (n=62).

3. Stature

Table 4 below gives the results for estimation of stature by sex for the whole sample. The data were not divided into Nave East and West since this would have led to extremely small sample sizes. Further, as expected, preliminary examination suggested that there was no significant difference between the two areas. The data are presented here in ranges of 0.05m. Individual results with one standard deviation of the estimate are given in the Level 3 report. It should be noted that this error in some cases was much greater than in others. This was the effect of using fragmentary remains rather than complete long bones. Where possible these latter were measured (the lower extremity in preference to the upper because it has a greater correlation with stature) but they were not always

available and this difference in accuracy, although only applying to a few cases, should be stressed.

Table 4: Stature Distribution by Sex, The Nave of the Church

Height (m)	Male	(%)	Female	(%)	All	(%)
1,50-1,55 (c,4'11"-5'1")	-	(-)	5	(25)	5	(9)
1,55-1,60 (c,5'1"-5'3")	3	(8)	8	(40)	11	(20)
1,60-1,65 (c,5'3"-5'5")	10	(29)	7	(35)	17	(31)
1,65-1,70 (c,5'5"-5'7")	13	(37)	-	(-)	13	(24)
1,70-1,75 (c,5'7"-5'9")	8	(23)	-	(-)	8	(14)
1,75-1,80 (c,5'9"-5'11")	1	(3)	-	(-)	1	(2)
	35		20		55	

Male Stature

Range: 1,58 - 1,77 (c,5'2" - 5'9,5"), 63% of individuals 1,63 - 1,70 (c,5'4" - 5'7").

Mean: 1,67 ±,04 (c,5'6")

Mode: 1,68, 1,73 (c,5'6", 5'8", 5 individuals).

Female Stature

Range: 1,51 - 1,64 (c,4'11" - 5'4,5"), 65% of individuals 1,59 - 1,64 (c,5'2,5" - 5'4,5").

Mean: 1,59 ±,04 (c,5'2,5")

Mode: 1,59 (c,5'2,5", 4 individuals).

Whole Sample

Range: 1,51 - 1,77 (c,4'11" - 5'9,5"), 60% of individuals 1,59 - 1,68 (c,5'2,5" - 5'6").

Mean: 1,64 ±,06 (c,5'4,5")

Mode: 1,63, 1,64, 1,68, 1,73 (c,5'4", 5'4,5", 5'6", 5'7", all have 5 individuals).

The above results are also shown in Figure 3 which illustrates the degree of difference by sex. Although the findings would seem to indicate a group of generally fairly short stature it should be emphasized that this sample represented only a small proportion of the Wharram Percy population. Therefore it could not be considered justifiable to conduct further analysis of the results at this level.

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