

## *Meet a Local Man who knew the Abbey...*

It was a privilege to 'meet' a man who knew Dore when it was an intact, operating Cistercian Abbey. I know I have an imagination that can people buildings with those who knew, used and loved them but, even so, looking at the man's remains lying peacefully before us was a moving experience. We knew he was buried under the floor of the East Cloister Walk but we wanted to find out more so Huw and Ron Shoemith, our Abbey archaeologist, removed one of his teeth for analysis. Here are the results of the excavation, analysis and further investigation....

### 1) Excavations at Dore Abbey by Huw Sherlock (given at the Dore AGM)

*Summary: Archaeological building recording, geophysical survey and targeted evaluation carried out at Dore Abbey in the autumn and winter of 2008 revealed new evidence about the architectural phases of development of the nave, the preservation of sealed archaeological deposits and the skeleton of a well-preserved adult inhumation.*

Archenfield Archaeology Ltd was commissioned by the Friends of Dore Abbey to carry out a programme of archaeological works at Dore Abbey, Abbeydore, Herefordshire. This included detailed photographic and metric recording of the portions of the standing structures in the grounds that were to be restored. A geophysical survey of the cloister garden was also carried out by Archaeophysica Ltd. Monitoring of the removal of soil which had built up against the wall of the nave and an exploratory excavation was also carried out. The inside of a blocked doorway through this wall was exposed and four evaluation trenches were opened to investigate the survival of any archaeological features and deposits.

The project was carried out in tandem with the restoration of the nave and cloister walls. Detailed photographic and drawn records were made of all the walls prior to and immediately after clearance of the thick vegetation that had grown up over them. The blocked doorway in the nave wall was recorded in detail from the farmyard (north side) and the south side was exposed by excavation. On both sides the base of the door surround was found to have decorative scroll work motifs. The original nave floor was exposed and its depth recorded.

Following a geophysical survey by Archaeophysica four more trenches were excavated to examine targets found by magnetometry. Trenches 1 & 2 were within the cloister. Trench 2 yielded little apart from evidence of a garden path but trench 2 showed evidence of a collapsed building with some stones that had been heated to a high temperature, this tends to confirm the theory that the kitchens may have been located here. Trench 4 was placed parallel to the nave wall to examine the relationship between two walls thought to be the original end wall of the nave and a possible later extension to form a galilee or porch.

Wall 4 in trench 4: At the western extent of trench 4 lay wall 4, (see figures 18 & 19) a substantial sandstone wall 1.4 metres thick. It had quoined and faced stonework on the inside (eastern) face, which also showed traces of mortar/plaster. This wall was not bonded into the north wall of the nave but abutted it. The external face was only exposed in a small sondage but this was sufficient to demonstrate that it had faced stonework, and was also not bonded into the nave wall. One bay's width further east the traces of a wall that had been bonded into the nave wall when constructed were clearly visible, and when excavated to the level of the nave floor some stones were found to still be in situ, the rest of the wall having been taken down at an earlier date, presumably when the nave was

extended. It seems unlikely, therefore that the two walls could have been in place at the same time and that there never was a 'galilee' at Dore.

Trench 3 was positioned outside the cloister in order to try and confirm Roland Paul's plan showing the position of the eastern wall of the cloister and the western wall of the dormitorium. Both of these walls were confirmed to be present in the positions shown on Paul's plan together with a considerable amount of fine worked stone, which closely resembles on of the decorated arcades now kept within the church. Beneath this layer and positioned within what would have been a cloister walk, probably covered by stone slabs a grave cut was found. This contained a single inhumation. The burial was supine, oriented east/west and was in good condition, with the entire skeleton present. The hands were crossed right/left over the pelvis area. The burial appeared to be a mature adult, 1.66 meters tall with no obvious signs of illness and with excellent teeth. One of these was taken as a sample so that analyses could be carried out to help determine the place of origin of the individual. The results of this have yet to be concluded but I am reliably informed that they will demonstrate that this was a local person (pers comm. Ruth Richardson). This would therefore seem to be the skeleton of an individual in generally good health, probably aged between 25 - 35 years of age who had enjoyed a reasonable diet. After excavation and recording was completed the skeleton was sealed under a layer of geotextile membrane and reburied. (Huw's picture on cover - report + more pictures available.)

## 2) Strontium and oxygen isotope analysis of tooth enamel from an individual from Dore Abbey by Jane Evans and Carolyn Chenery

NIGL report number R263

NIGL: British Geological Survey, Natural Environment Research Council (NERC) Isotope Geosciences Laboratory - one of the largest facilities in Europe for studying naturally occurring isotopes.

Introduction: A single molar tooth was submitted by Ruth Richardson for isotope analysis. The tooth was from a young man, respectfully laid north-south across the cloister walk. He was not lifted, just photographed and back-filled. He was well nourished from childhood and his teeth are in good order and only slightly worn. His crossed hands suggest a member of the abbey - possibly a lay-brother. The only dating evidence is stratigraphical in that he was buried, presumably in a shroud, just under the floor of the cloister walk. However, we do know of monks who came from different locations to serve in the abbey (R. Richardson pers comm.).

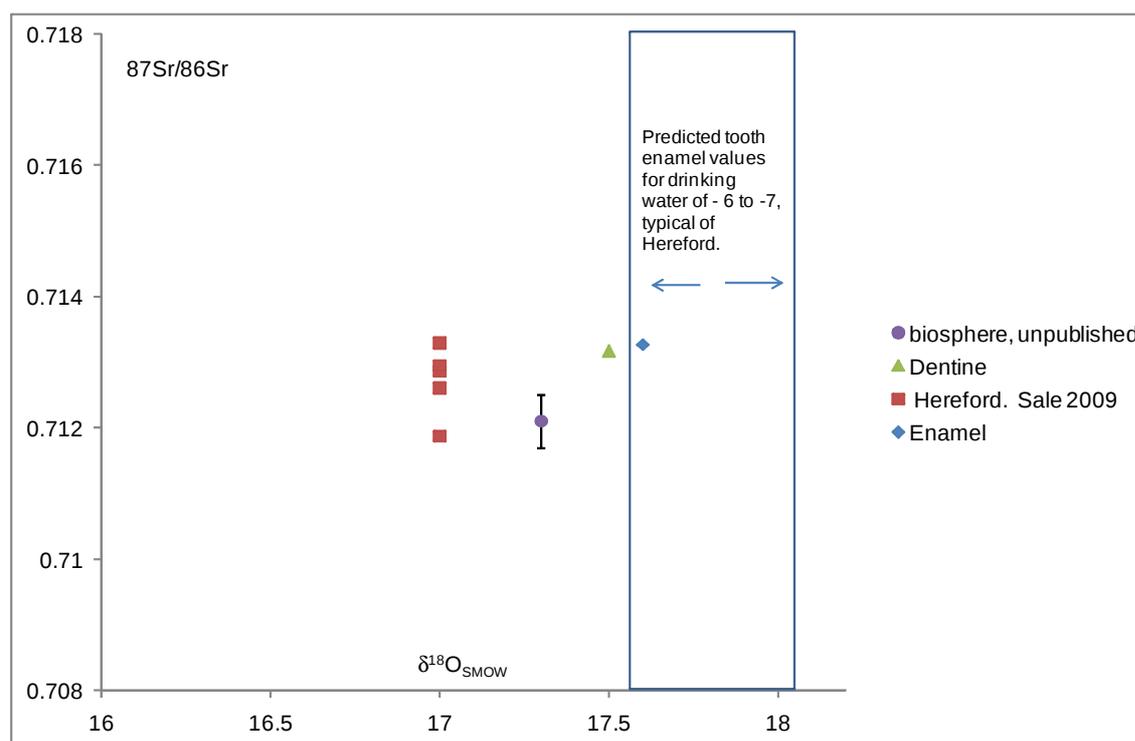
Analytical Method- Sr isotopes: The available enamel surface of the teeth was abraded from the surface to a depth of >100 microns using a tungsten carbide dental bur and the removed material discarded. Thin enamel slices were then cut from the tooth using a flexible diamond edged rotary dental saw. All surfaces were mechanically cleaned with a tungsten carbide bur to remove adhering dentine. Three samples of dentine were collected. The resulting samples were transferred to a clean (class 100, laminar flow) working area for further preparation. In a clean laboratory, the samples were first cleaned ultrasonically in high purity water to remove dust, rinsed twice, dried down in high purity acetone and then weighed into pre-cleaned Teflon beakers. The samples were mixed with <sup>84</sup>Sr tracer solution and dissolved in Teflon distilled 16M HNO<sub>3</sub>. Strontium was collected using Dowex resin columns. Strontium was loaded onto a single Re Filament with TaF following the method of Birck (1986) and the isotope composition and concentrations were determined by Thermal Ionisation Mass spectroscopy (TIMS) using a Thermo Triton multi-collector mass spectrometer. The international standard for <sup>87</sup>Sr/<sup>86</sup>Sr, NBS987, gave a value of 0.710222 ± 8 (n=35, 2 □) for static analysis. All

strontium ratios have been corrected to a value for the standard of 0.710250. Blank values were in the region of 100pg. Data are presented in Table 2.

**Analytical method - Oxygen isotopes:** Small fragments of clean enamel (15-20 mg) were treated to extract PO<sub>4</sub> radicals and precipitated as silver phosphate, using the method of O'Neil *et al.* (1994). The fragments of enamel were cleaned in concentrated hydrogen peroxide for 24 hours to remove organic material and subsequently evaporated to dryness. The samples were then dissolved in 2 M Nitric acid and transferred to clean polypropylene test tubes. Each sample was then treated with 2 M potassium hydroxide and 2 M hydrogen fluoride to remove calcium from the solution by precipitation. The samples were then centrifuged and the supernatant added to beakers containing ammoniacal silver nitrate solution and heated gently to precipitate silver phosphate. The silver phosphate was, rinsed, dried and weighed into silver capsules for analysis. Oxygen isotope measurements on each sample were analysed in triplicate by thermal conversion continuous flow isotope ratio mass spectrometry (TC/EA-CFIRMS). The reference material NBS120C, calibrated against certified reference material NBS127 (assuming  $\delta^{18}\text{O}$  of NBS127 = +20.3‰ versus SMOW; IAEA, 2004), has an accepted value of 21.70‰ (Chenery, 2005). The reproducibility of NBS120C during this set of analyses was 21.70‰ ± 0.2 (1σ, n=19). Drinking water values are calculated using Levinson's equation (Levinson *et al.*, 1987), after correction of +1.4‰ for the difference between the average published values for NBS120C used at NIGL and the value for NBS120B used by Levinson *et al.* (1987) (Chenery *et al.* submitted). Data are presented in Table 1 and plotted in Figure 1.

		$\delta^{18}\text{O}_{\text{SMOW}}$	±	drinking water	±	Sr ppm	$^{87}\text{Sr}/^{86}\text{Sr}$ n
AA-114-32	enamel	17.6	0.18	-7	0.4	72.00	0.71327
	dentine					91.43	0.71317

**Table 1.** The strontium and oxygen isotope composition of tooth enamel, and the strontium isotope composition of associated dentine from an M2 taken from a male inhumed in Dore Abbey.



**Discussion:** Dore Abbey is about 10 miles SW of Hereford in an area underlain by Old Red Sandstone. It is in an area with drinking water values between -6 and -7 ( Darling et al 2003) and the strontium isotope composition of that area is currently estimated from human tooth enamel  $0.7128 \pm 0.001$  ( n=5, 2□), Sale 2009, and  $0.7121 \pm 0.0004$  from water, and plants (Evans unpublished data). The dentine value provides a further estimate of the  $^{87}\text{Sr}/^{86}\text{Sr}$  isotope composition of the area of Dore Abbey.

Tooth enamel record the isotope composition of the childhood environment, when the tooth was mineralizing i.e. broadly between 6 and 16 years of age. The tooth enamel from the individual found in Dore Abbey has a composition that is within error of the higher values from the study by Sale (2009) of human enamel from this area of Herefordshire and it is also close to the dentine value, representing local soil values. The oxygen isotope composition of the enamel is within the range of values expected from Hereford. It is therefore concluded that there is no evidence to suggest the individual was not from Hereford and the simplest interpretation is that he was raised close to where he was found. This does not rule out other areas if Britain and Europe where a similar combination of oxygen and strontium isotope values might be found, but the simplest interpretation is that he is a local.

#### References

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### **3) From Dr. Glyn Coppack, our foremost national expert and monastic scholar, and current head of English Heritage's East Midlands regional team, September 2009:**

To RER - You say the skeleton comes from the east cloister alley. Does that place it anywhere near the entrance to the chapter house vestibule? This part of the east alley was commonly used for the burial of lay people, especially patrons, before the Cistercians agreed to church burial in the second half of the thirteenth century. There are recorded groups of graves in this location at Fountains, Rievaulx, and Melrose and I see that Roland Paul recorded a couple of coffin lids / grave markers to the south of the vestibule entrance at Dore. At Fountains, we excavated the northernmost of the group outside the door to the library/sacristy so the burials can be numerous. At Fountains at Rievaulx the burials appear to date from the later twelfth century, and were all male. Women seem to have been buried in the galilee porch.

I would suspect your body is neither monk nor lay brother, but local gentry. Both monks and lay brothers would have normally been buried in the convent cemetery. The form of burial with crossed arms is simply one of the three standard poses which have as much to do with whether the body was bound, shrouded, or coffined as to whether or not they were religious. Any other order might be a bit informal where they buried people but the Cistercians seem to have been remarkably consistent...

**CONCLUSION by Ruth E. Richardson:**

**Our skeleton is 5 feet 5 inches tall (1.66 meters), with straight limbs and the best set of teeth I have ever seen. His height and skeleton both show that he ate well from childhood, with nutritious balanced meals, for there is no sign of malnutrition and no cavities indicating too much sugar in his diet. His bones show that he did not suffer any longterm illness. We know he is male from the shape and size of his pelvis, the easiest to note of several indicators of sex. His bones and teeth can tell us his age at death – between 25 and 35 years of age – and teeth analysis shows that he is likely to be a local man. So he knew the Golden Valley well and when he died in the prime of life after a short illness he chose to be buried in a prestigious position in Dore Abbey. He has not been precisely dated but Dr. Coppack points out that his burial site suggests he lived before c.1250 and that he, or his family, were possibly patrons of the Abbey. He was gentry.**

**The heraldic floor tiles include the arms of Bohun, Berkeley, Vere and Clifford – the Roger de Clifford who paid an enormous sum to King John to marry Sybil of Ewyas, becoming Lord of Ewyas, Constable of St. Briavels' Castle and Warden of the Forest of Dean was buried here in 1231. The Cecil family, ancestors of Lord Burghley, were linked to Dore and local families kept their papers in the security of the Abbey for in c.1520 Milo (Miles) ap Harry, Blanche Parry's brother, removed their family documents. Other families can be traced through documentary evidence and through records of the stained-glass. Our man was evidently a member of one of these landowning families and his prominence is suggested in that he lies adjacent to the entrance of the chapter house vestibule, indeed this might still have been in use as the chapter house when he died. Our cover picture shows him and suggests what he might have looked like in life. So please remember him when you visit the cloister garden – we cannot know his name but we do know that he wished for an Abbey burial. He lies in peace in the place he knew so well in life – the Abbey was as important to him in his time as it is to us today.**

**My very grateful thanks to Jane Evans, Carolyn Chenery, Glyn Coppack and Huw Sherlock.**

**Ruth E. Richardson 2009**



Dore Abbey's Skeleton - and what he may have looked like.