# Excavation of Human Remains at Nenagh North, St Conlan's Road, Nenagh, Co. Tipperary[1]

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*This report details the excavation of unmarked inhumed human remains, which were found during the monitoring of a development at St Conlan's Road, Nenagh, County Tipperary in December 2000, by archaeologist Mr Brian Hodkinson (excavation licence number 00E0901). The excavation of those remains was undertaken by the writers in late 2000 (excavation licence number 00E0949). Some ancillary monitoring was also carried out in the vicinity of the remains, but no further archaeological features were uncovered. The human remains were analysed by osteo-archaeologist Linda Lynch and the excavation was funded by the developer.*

## The Excavation

The site of the human remains was located in the barony of Lower Ormond, the parish of Nenagh and the townland of Nenagh North, Co. Tipperary (OS six-inch sheet 20:8:6, NGR R843801). The site was on the western outskirts of the historic town of Nenagh (Farrelly and O'Brien 2002, 335-6). The site was not on or in the immediate vicinity of any archaeological recorded monument or place. O'Donovan, writing in the 1840s does not mention the townland of Nenagh North nor is it mentioned in general local study references for the area (O'Donovan 1840; Lewis 1837). It was found from the excavation that there were two individuals (numbered 1 and 2), which lay directly under the topsoil and rested on the natural boulder clay. No distinct grave cuts were noted and no artefacts were recovered. The remains comprised a complete articulated skeleton (skeleton 1) lying in an almost east-west position, which lay extended on the southern limit of an access road. In addition, the remains of a second individual (skeleton 2) were uncovered *c.* 0.50m to the north of skeleton 1 (plate 1). The topsoil where the human remains were discovered consisted of a sticky silty yellowish clay, *c.* 0.50m depth, with frequent inclusions of angular and sub-angular limestones. Skeleton 1 (*c.*50cm below ground level) rested directly on top of the natural subsoil, which consisted of a natural grey compact stony gravel. A nearby pipe trench cut into this natural deposit and there it reached a depth of at least 1.75m. The lower legs and feet of this individual were not present at the time of excavation. The remains of skeleton 2 were extremely fragmented and may have represented the remains of a burial that was disturbed in antiquity. In any case, skeleton 2 was further disturbed on exposure and was subsequently immediately lifted by Brian Hodkinson in order to preserve the remains.

The human remains excavated represented two adult males. One radiocarbon date from Skeleton 1, returned a date of AD660-910 and AD920-960 (sigma 2 calibration, Beta 192432). This dates the human remains to sometime between the seventh to tenth centuries AD, or the Early Medieval period (plate 2). Due to the proximity of the remains it may be tentatively suggested that they are contemporary, however this is impossible to prove.

Plate 1: Skeleton 1 under excavation from east.

Plate 2: Skeleton 1, from north (scale 1m).

## The Analysis

The analysis of human skeletal remains can reveal invaluable data about an archaeological population. This includes information on demography, the age and sex profile of a population, stature, diet, possible genetic variations, and various diseases and traumas that an individual may have endured during her/his lifetime. The age-at-death of an adult may be determined using a number of methods. These include morphological changes in the pubic symphysis using the Suchey-Brooks method, changes in the auricular surface of the ilium (Lovejoy *et al* 1985), rates of dental attrition (Brothwell 1981, 71-2) and rates of fusion of the secondary epiphyses (Scheuer and Black 2000). Archaeological skeletons cannot be aged very accurately and are usually assigned into broad age categories. These are 'young adult' ('YA' 17-25 years), 'middle adult' (25-45 years), and 'old adult' (45+years). The sex of adults is determined by assessing morphological differences in the skeleton between females and males, particularly using the pelvis and skull. In general, females tend to be slender and small with marked particular traits in the pelvis for the birthing process. Males tend to be larger and more robust. The stature of an adult individual can also be estimated from complete long bones (Trotter and Glesier 1952). The presence and severity of various dental diseases may be examined and can reveal information particularly about diet but also about general oral hygiene. Pathological lesions can also provide a wealth of information about the general health of a population as well as other social issues such as violence and disease prevalence.

Skeleton 1 was the remains of this male adult (25-40 years at the time of death) were relatively well preserved. A number of dental diseases and at least one pathological lesion were present on the teeth. Two other pathological lesions were also noted in both the cranial and post-cranial skeleton. A congenital deformity was present in the sacrum. The sex of this individual was determined from morphological traits in the pelvis and the skull, and on metrical analysis. The age was estimated from the rate of degeneration on the auricular surface of the ilia (Lovejoy et al 1985), and on the rates of dental attrition (Brothwell 1981, 71-2). It was not possible to estimate the living stature of this individual, as the long bones were incomplete.

Although the skeleton was basically complete, many of the bones were quite fragmented and eroded post-mortem. The cranium and mandible of this individual were almost complete. The scapulae were very incomplete while only the lateral ends of the clavicles were absent. The right arm bones present were the shaft of the ulna, and the radius minus the proximal end. All of the right hand bones were present and well-preserved. The left arm bones present were the distal half of the humerus, the proximal half of the ulna, and the shaft of the radius. The left hand was complete, except for the triquitrium. The spinal column was poorly preserved with significant post-mortem fragmentation and erosion and the condition of the vertebrae deteriorated inferiorally. The pelvis was also incomplete. The femora were present but fragmented. Also present were the proximal half of the right tibia, the proximal diaphysis of the right fibula, and the proximal epiphysis of the left tibia. The dental remains were as follows:

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| cal | cal | cal | cal | cal | | | | | cal | | cal | cal | cal | cal | | |
| P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | |
| ~~18~~ | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | |
| 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | |
| P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | |

Slight to moderate deposits of calculus were present on a number of teeth as indicated above. The aetiology of calculus is multi-casual but its formation is aided by alkaline in the mouth and a high protein diet (Lieverse 1999). Although the severity of the disease is always recorded the absence of, or the slighter deposits of calculus on an individual does not necessarily indicate that soft foods were only moderately consumed. Plaque can be removed through oral hygiene, occupational practices, and through the consumption of a simultaneously gritty diet. In addition, evidence of the disease may be lost through various post-mortem taphanomic processes.

A moderate-sized carious lesion was present on the distal aspect of the crown of the lower right second premolar (45), and a small carious lesion was present on the mesial aspect of the crown of the lower right first molar (46). Carious lesions - cavities in the enamel of the teeth - usually occur as a result of a high carbohydrate intake. Various bacteria, which are contained within plaque, can metabolise certain carbohydrates into an acidic waste that can dissolve the enamel of the teeth (Mays 1998, 148). The lesions observed in the dental remains of this individual occurred in the inter-tooth space between two teeth in the lower right mandible. It seems possible that a portion of food became lodged there and was not removed. The food debris stagnated and eventually formed the lesion.

No other dental diseases were observed in the remains of this individual. An anomaly was present on the incisal edge of the upper right first incisor. The incisal edge was chipped extensively forming a crescent shape in the tooth. While there were very slight traces of chipping on a number of other anterior teeth, this was the only tooth to display such extensive changes. The anterior maxillary teeth of this individual overlapped the lower anterior teeth during life and the wear patterns reflected this very clearly. There was wear on the labial side of the lower incisors and canines, and on the lingual side of the upper incisors and canines. As noted, the chipping was really only evident on a single tooth. The tooth may have been chipped post-mortem. However, there appeared to be multiple chips which may indicate a repeated action carried out by this male during life. The multiple nature of the trauma militated against a cause such as fall. Chipping of the anterior teeth can occur as a result of occupational activities, which are repeated. It may seem unusual that the obvious chipping is so clearly confined to one single tooth and one may initially expect at least the opposing tooth to be equally affected. However, the chipping is a trauma and is not a pattern of wear and so would not necessarily affect more than one tooth. It is unlikely that the chipping occurred as a result of an activity which involving holding something between the teeth (such as holding a clay pipe) as there would be wear rather than trauma. Instead, a more sharp short action should have been the cause. Trauma such as this chipping can occur as a result of such activities as opening safety pins with the teeth (Kennedy 1989, 153 after Ronchese 1948), and it is possible that the chipping of the tooth of this individual resulted from this or some similar action.

At least two other pathological lesions were present on the skeleton of this individual. The superior aspects of the frontal and both the right and left parietals of the skull had slight traces of porosity on the ectocranial surface. This may have represented a healed lesion of a metabolic condition related to the production of iron in the bone marrow. These lesions can occur when, as a result of a deficiency in iron, the body's marrow attempts to increase its output of iron (Mays 1998, 142). This can result in bone changes in both the skull - porotic hyperostosis - and/or in the eye orbits - cribra orbitalia. The middle layer or diplöe of the

bone expands and there is a corresponding thinning of the outer bone cortex. This can result in the appearance of small holes or foramina on the outer surface of the bone. The lesions are frequently assumed to represent an iron-deficiency anaemia and therefore ill-health. However, recent studies indicate that when the body is under stress from an invading organism, the body increases its output of iron in order to counteract it. Thus iron-deficiency may actually be a sign of a healthy defence system (Stuart-Macadam 1991, 105; Roberts & Manchester 1995, 166-7). The lesions noted on this individual may represent the well-healed lesions of porotic hyperostosis.

Evidence of trauma was present on a fragment of a right rib. A healed fracture occurred *c.* 20mm from the lateral end of the rib. Traces of woven bone (callus) were visible but were almost completely remodelled into the stronger, more compact lamellar bone. Callus represents the ossification of fibers, which initially bind together the broken ends of fractured bones (Ortner and Putschar 1981, 63). The lesion was located in the anterior of the chest and only one rib was affected, which may indicate a direct sudden blow to the ribs. This type of injury is often linked to acts of violence rather than accidental occurrences (Wells 1982, 161).

A congenital abnormality was present in the sacrum of this individual. The neural arches of the fourth and fifth sacral vertebrae were unfused and the third vertebra may also have been affected. The remaining sacral vertebrae were extremely fragmented post-mortem. The non-fusion of the neural arches of the spine is indicative of a condition called spina bifida. It can lead to exposure of the spinal cord and can leave an individual susceptible to various injuries and serious infections (Roberts and Manchester 1995, 36). The condition is usually not compatible with life. However, a milder form of the condition can occur, particularly in the sacrum, known as spina bifida occulta. In this case, the exposed spinal cord is covered and protected by cartilage or membrane and thus the life and lifestyle of the individual are unaffected (ibid.). It is likely that this individual was completely unaware of this defect.

This burial was supine, extended and was orientated almost east-west. The head was turned and the lower arms were slightly flexed and prone, so that the right and the left hands overlay the right and left sides of the pelvis respectively. The intermediate and proximal phalanges of the fingers of the hands were flexed. This reflects the normal poise of the hands - when the palms are faced downwards - once the muscles are relaxed, presumably in this case through death. No coffin or grave cut was evident. It seems possible that the body was instead loosely bound by a winding sheet or shroud (a tightly bound burial is often clearly evident by the alignment of the bones).

The second skeleton 2 a male adult was extremely poorly preserved. The sex of this individual was estimated from the glabella of the frontal bone (centre of the brow ridges) it has the same morphology as the equivalent bone in skeleton 1 who was a male individual. The age could not be accurately determined. Only one molar tooth was preserved and this was insufficient data to attempt to determine an age at death. The bones present were a fragment of the frontal, the right parietal (incomplete), and a fragment of the right mandible. The dental remains were as follows:

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| PM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM |
| ~~18~~17 | ~~16~~ | ~~15~~ | ~~14~~ | ~~13~~ | ~~12~~ | ~~11~~ | ~~21~~ | ~~22~~ | ~~23~~ | ~~24~~ | ~~25~~ | ~~26~~ | ~~27~~ | ~~28~~ | |
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| PM | PM cal | P cal | P | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM |

The deposits of calculus (see skeleton 1 for description) varied from slight to moderate in severity. No other pathological lesions were observed. The actual position of these bones in the ground could not be established due to disturbance.

## Discussion

The human skeletal remains recovered in Nenagh represented at least two adult male individuals. One individual (skeleton 1) was the extended supine burial of a male aged between twenty five and forty years at the time of death. The remains of the other individual (skeleton 2), who was a male adult, were very poorly preserved and may have been already disturbed in antiquity, as no other post-cranial bones were recovered. The better-preserved remains of skeleton 1 revealed the preservation of a number of interesting pathological lesions, detailed above. However, it is also possible that other insults may be underrepresented. For example, evidence of various pathological processes - in particular degenerative joint disease - is quite commonly observed on the vertebrae of archaeological skeletons. However, the very poor preservation of the spine of skeleton 1 militates against the preservation of such evidence.

The discovery of human remains in Nenagh North was entirely unexpected. There was no surface evidence of burials and there were no known records of burials in this area. No grave goods were recovered with the remains and there are no archaeological structures in the immediate area to which the burials may be related. From the radiocarbon date returned it can be stated that the burials date to between the seventh and the tenth century AD, the Early Medieval period in Ireland.

These burials present a number of possibilities. Firstly, as regards skeleton 2 only fragments of the skull and mandible were recovered. It is unlikely that the post-cranial remains had entirely disintegrated post-mortem. Another possibility is that this burial represented a decapitated skull, alone. However, despite the poor preservation there was no evidence of cut marks. The skull fragments preserved were two large, distinct portions of the skull vault and a fragment of the mandible. It seems possible that these cranial fragments may represent the remains of a burial, which had previously been disturbed sometime in antiquity.

The burial of skeleton 1 represents a clearly deliberate interment, which indicates care was taken during the burial. Indeed, apart from the orientation, this burial is similar to a Christian burial and the radiocarbon date reflects this. However, initially this appears unusual as it was isolated and within unconsecrated ground, as there is no evidence to suggest that this was a sacred space in the past. While it is, of course possible, that a whole cemetery may lie undiscovered outside the limits of the excavation, it seems unlikely and the on-site evidence indicated that these skeletons were probably isolated burials. Extensive areas of topsoil were stripped as part of development with no evidence of further burials. In addition, the soil overlying the skeletons displayed little evidence that the earth had been extensively disturbed. This suggests that these may indeed have been isolated burials. It is impossible to assess however, whether the two individuals were contemporary burials.

O'Brien (2003, 1999) who has undertaken studies of burial in early historic Ireland and Britain, maintains that it was in the fourth-century and in a pre-Christian context that the west-east orientation of the body was introduced to Ireland, probably from the Roman world (2003, 65). In the seventh and eighth-centuries (to when these human remains may date),

the common rite of burial was extended supine (on the back) inhumation, orientated west-east (head at west), though not always in a shroud or winding sheet (O'Brien 2003, 67). There was also a transition of burying people with their ancestors in familial plots, which may have originally been pagan sites, to Christian sites so that by the eighth-century '... secondary burial in ancestral cemeteries ceased and burial among the saints became an acceptable substitute' (O'Brien 2003, 69). This may have been the case in parts of Ireland at this time but it does not provide an explanation for isolated burials that are not associated with a cemetery or consecrated ground, but that are seemingly Christian burials: supine extended inhumations orientated west-east. The radiocarbon date returned for the human remains ranges from the seventh-century to the tenth-century. The end of the eighth-century in Ireland saw the arrival of the Vikings from Scandinavia and by the tenth-century they had begun to over-winter and settle in Ireland (Ó Floinn 1998, 131). It is not suggested that the human remains are those of Vikings as the evidence does not fit with the current view of Viking burials dating to this period: these, for instance, have grave goods (see Harrison 2000). They may conceivably have been native Irish people who died at this time, but are unusual in that they were not buried in consecrated ground.

In historic times, adult social deviants such as unrepentant murderers, their victims, suicides, strangers, and excommunicates (amongst others), as well as some children, particularly the un-baptised, may have been denied burial in consecrated ground (Lynch 1998). Perhaps these individuals excavated may represent one of those denied a Christian burial. In addition, it should also be remembered that in the centuries before antibiotics people were frequently at the mercy of lethal diseases - such as bubonic plague, cholera, typhus and influenza - which would literally have swept through the country claiming thousands of victims (Robins 1995). Social strife, for example in a period of war, would also have claimed numerous victims through violence but also through famines. In times of such social stress normal burial practices were frequently abandoned (Daniell 1997), and people may often have been buried in the nearest convenient place, be it consecrated or not. However, convenient burials in unconsecrated ground were also carried out for much simpler reasons. In a non-motorised era and with poor roads, it would sometimes have been difficult to get a corpse to the nearest cemetery for burial before decay set in (*ibid.*; Fry 1999). Even one or two miles, particularly in poor weather could prove extremely difficult.

## Conclusion

The human skeletons recovered from the site at St Conlan's Road, Nenagh North represent the remains of two adult males. One male was relatively well preserved and had been buried supine and extended, while the remains of the other individual were poorly preserved and may be disarticulated. The former also displayed evidence of a number of pathological lesions including possible iron-deficiency anaemia, a healed rib fracture, and traumatic chipping of a front tooth. While it is difficult to determine whether the two individuals are contemporary burials, it seems apparent that the remains were isolated. One the basis of the radiocarbon date, the burials are historic and date to the early medieval period and thus may represent unconsecrated burials. However, the cause of death of both individuals and the reason for their apparent isolated burial remains speculative.

The human remains, in accordance with the National Monuments Act 1930-2004 will be deposited presently in the National Museum of Ireland, the state depository for such archaeological remains.

**References**
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