Inhumations And The Matrix: the value of stratigraphic sequence in ancient burial sites

by Peter Clark

This short note will address itself to the perception and recording of stratigraphic units on cemetery sites and to the relationship between osteo-archaeological analysis and the stratigraphic sequence of medieval and later cemeteries. Excavation of such sites can create difficulties for the excavator, particularly when on the usual limited budget and timetable. This is especially the case if cemeteries are intensively used and thus evidence suffers repeated disturbance by intercutting burials, often with high levels of other post-depositional interference.

Most excavation strategies are based on the concept of stratigraphic units and their relative chronology as described by their stratigraphic relationships. Various papers at earlier Interpreting Stratigraphy conferences have explored this concept, discussing the problems such as identification of contexts in the field. Yet, in general, the approach has proved robust and practical.

At Canterbury, we have routinely perceived burials as a sequence of stratigraphic units, that is to say the skeleton is perceived as a deposit, generally the primary fill of a cut. Most cases of simple burial can be dealt with adequately by this approach, even though there can be some difficulties in terms of assigning grave goods to contexts. However, in more intensively used cemeteries the approach is far less effective. A high degree of post-depositional disturbance often means that the cut interface is impossible to see, and articulated and disarticulated human bone often appears to lie in an undifferentiated brown soil. The usual rules do not seem to apply, or at least are very difficult to put in to practice.

A particular problem is to differentiate between in situ burials and disturbed bone: an entire skeleton is one thing, but it is more difficult to recognise fragments of heavily truncated bodies as being in situ. Indeed, "disturbed bone" itself can have different degrees of disturbance, and therefore different degrees of analytical potential. How far has bone been moved away from its place of burial, and can it be closely related to clearly articulated material in close proximity? Even if we do create criteria by which we can identify in situ material, the normal matrix approach of establishing a relative chronological sequence by examining stratigraphic relationships can be extremely time consuming, expensive and frustrating.

An alternative to this approach is to view the skeletal material as inclusions within a deposit: in other words to treat each skeleton as a find. In extreme cases, this might mean that an entire cemetery might be viewed as a single stratigraphic unit, containing various elements of articulated and disarticulated human bone. Analysis would therefore be focused on the study of the depositional history of this deposit, using physical and spatial data without creating arbitrary stratigraphic units. Yet the three-dimensional recording of skeletal material implied by such an approach would be very expensive and time-consuming, both in the field and during analysis. The expense of such endeavours must be carefully weighed against the research potential and analytical destiny of the data set we are retrieving. Is it
really worth the effort?

An excavation, carried out in the 1970's, produced some 400 individuals in a small part of a graveyard associated with the Celtic monastery of Kilrymund, a Culdee foundation eventually absorbed into the later Roman Catholic establishment introduced by King David I of Scotland. The excavators had employed a mixture of the "planum" and "context" methods of recording, and carbon dating suggested that the cemetery was in use between about AD500 and 1000.

The burials were without grave goods, though a few were placed in stone cists and others had large stones flanking the skull. Apart from the uppermost burials, grave cuts could not be identified and most of the burials were disturbed or truncated. There was no clear pattern of changing orientation or spatial layout. A long process of analysis of the site plans resulted in a complex mass of relationships based, where possible, on superposition and truncation. Yet there was little data to phase this sequence beyond its basic statement of relative chronology. Even this approach did not take account of the physical proximity of burials and unarticulated bone.

A detailed study of the skeletal material was undertaken by colleagues from Aberdeen University and, whilst much interesting anecdotal information regarding palaeopathology was recovered, no clear, statistically viable changes in anatomical or pathological attributes could be observed in the sequence of burials. I invited a specialist in human anatomy from Tayside Health Board to read the report and explain to me what the findings of this extensive (and expensive) study implied about past populations: what it meant in terms of "real people". Whilst extremely complimentary about the scientific standards and presentation of the report, he said that the attributes identified lay within the normal range of variation in a modern population. In essence, he felt that there was nothing unusual about these skeletons except that they "worked hard and ate badly", something we might have expected of people living in the second half of the first millennium in Scotland. I was a little disappointed. But was it our data collection procedures that were at fault?

Working with an osteo-archaeologist, we attempted to explore ways in which we could better record human burials, particularly in terms of physical relationships and proximity. Peter Hill kindly allowed us to interfere with his excavations at Whithorn, Dumfries and Galloway, where a complex mass of intercutting graves presented similar problems to those at Kirkhill, exacerbated by the summer sun baking the ground hard as concrete. Working with a professional osteo-archaeologist as part of the excavation team certainly improved data collection and recording, particularly in terms of decisions about the relationship between various skeletal elements and their articulation. However, we concluded that the normal statistical variation of human skeletons limit the inferences that could made about burials in archaeological terms, at least in this medieval period.

Much of the information derived from such data sets really informs the agenda of historical medicine rather than archaeology (yet the medical profession have directed little research funding to archaeological excavation!). In scientific terms our sample sizes are very small, and much work still relies on data collected from a survey of American military personnel in the post war years (Trotter and Gleser 1958).

Where we have clear research objectives that might be addressed by such data, the picture changes somewhat. Questions of ethnicity
and familial grouping may be open to osteo-archaeological analysis, and then the identification of sequence in the cemetery regains its relevance, contributing to the importance of the project. Studies of DNA composition, though still at an early stage, may offer an exciting avenue of research, whilst more traditional examination of non-metric variables may also offer opportunities to address these issues. Whilst the statistical validity of such techniques has yet to be confirmed, the identification of traits which inform an archaeological agenda will clearly benefit from an understanding of relative chronology, best derived from stratigraphic sequence.

In summary, therefore, I suggest that we must look very carefully at the value of spending great amounts of time and money in recording cemeteries and in analysing the populations we retrieve. Does the analytical potential of the material really justify the resources we need to undertake this work? Or are we using a large part of our limited budgets to simply say "they worked hard and ate badly"?

**Bibliography**