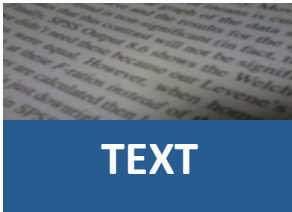




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## **The case of the tennis playing judge – can we infer occupations from skeletal remains?**

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Amateur Detective - “Consider Inspector, the skeleton shows marked changes at the sites where the tendons transmit forces to the bone (entheses), so the individual engaged in strenuous repetitive manual labour. Along with the shovel next to him, it is clear that this individual did a lot of digging and the city centre location of the body suggests that he must have been a road digger”.

Changes to entheses, such as those described above, have long been used to infer the types of activity, social organisation and sexual division of labour in, particularly in past societies. Enteses, are particularly vulnerable to injury because of the differing mechanical properties of the tissues, an analogy for this is the common failure of metals welded together when pulled on. In humans failure occurs rarely but one of the common sites for this is the shoulder. This can happen during hard manual labour, but often occurs in the elderly when picking something up, like a shopping bag. So, it is clear from clinical evidence, that the changes which have been widely used to say that an individual was doing heavy manual work, could equally indicate that somebody has done something unusual or that age has caused degeneration to occur in the tissues leading them to fail under normal conditions.

Recent research on human remains also indicates that using these markers to indicate repetitive loading is flawed and that the ageing process has a greater effect than occupation. Research on this area persists because we, as archaeologists or anthropologists, are interested in task division, sexual division of labour and social stratification. Burial artefacts have been used to indicate this, but it is almost impossible to know whether the individual buried used those tools or goods during their life or whether they had other significance. For this reason, it is important to continue studying entheses to understand the biological processes involved in their shape, size and the cause of changes.

My research shows that links between other proposed indicators of loading, such as degeneration of the joints, are unclear and if looked at separately would indicate different muscle usage. This is likely to be because the biology of the structures differ, as do the loads. This can be further seen in that the size of joints and the size of entheses are not linked. Problems that we have with this research, even when we use identified skeletal collections (skeletons whose sex, age-at-death, and occupation are known) are that we don't understand the muscle loadings involved in occupations nor their lives outside of work.

At this stage of my research it is clear that enthesal changes are more complex and are in fact a consequence of many other factors so cannot currently be used to identify activity, social organisation and sexual division of labour in past societies.

Police Inspector - "...but the signet ring on his finger identifies him as His Honour Judge Herbert, a well-known amateur gardener and tennis champion".

### **Editors**

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