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A bioarchaeological study of medieval burials on the site of St Mary Spital: excavations at Spitalfields Market, London E1, 1991–2007

Brian Connell, Amy Gray Jones, Rebecca Redfern, Don Walker. Museum of London Archaeology Monograph Series 60. MOLA, London. 2012. 303pp. ISBN 978-1-907586-11-8. (Hardback).

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I have been eagerly awaiting the publication of this book since 2000, when, as a PhD student, I was lucky enough to be able to visit the St Mary Spital excavations where I knew quite a few of the excavators and osteologists. It was apparent at that early stage in the research of St Mary Spital that this was a very exciting and important excavation and skeletal assemblage. This book does not disappoint.

This monograph summarizes the osteological analysis of the medieval skeletons excavated; the archaeology of the site will be published in three additional volumes, focusing on Roman, medieval and 16th to 19th century Spitalfields (Daykin et al., in prep; Harward et al., in prep; McKenzie and Thomas, in prep). The cemetery was divided into four phases based on the stratigraphy and a sequence of radiocarbon dates: period 14 (c. 1120-1200 AD), period 15 (c. 1200-1250 AD), period 16 (c. 1250-1400 AD) and period 17 (c. 1400-1539 AD). This allowed the investigation of temporal patterns in demography and pathology. Most of the skeletons were excavated from individual graves (burial type A), or graves with multiple burials arranged in a single horizontal row (burial type B, with between two and seven bodies) or arranged in a vertical stack (burial type C, between two and eleven bodies deep). However, a significant proportion were excavated from mass graves, with burials arranged in a series of horizontal rows stacked on top of each other (burial type D, each containing between eight and 45 individuals). Burials of type D date from all four periods of cemetery use and not to a single event (such as the Black Death – in fact the vast majority of mass graves pre-dated 1348-9, p218). The monograph suggests that these individuals relate to catastrophic events (p19, and section 4.3 “Defining catastrophe: mass burial at St Mary Spital”), although in periods 14, 15 and 16 the age-at-death profiles are similar for burial types ABC and D (pp217-228), rather than attritional and catastrophic profiles respectively. Despite this, mass graves (D) are still interpreted as relating to different episodes of famine or epidemics (but see discussion on pp271-2). The lack of clarity regarding the paleodemography of the graves is a weakness in the monograph, and more detailed investigation, either separating out grave types A, B and C, or by utilizing a Bayesian approach (Gowland and Chamberlain, 2005), might have provided more conclusive results in

this respect, as acknowledged by the authors on p275. Throughout the monograph, the pathologies of these two burial types (ABC and D) are compared, further reinforcing the idea that they represent attritional and catastrophic profiles.

The introduction clearly defines the scope and limitations of the project, which was developer-funded. Due to the huge numbers of individuals excavated, only those over 35% complete were selected for analysis, giving a sample size of 6950 individuals; 5387 of these were analyzed within the timeframe of the project (51.2% of the excavated sample). Clearly this was a pragmatic decision, focusing on the individuals most likely to provide “the most comprehensive and accurate data” (p20), which was fully justified in the commercial context and given the scale of the excavation and the number of individuals recovered. However, the effects of this sampling strategy on the results of the subsequent analysis could have been discussed more fully – for example, Brickley and Ives (2008; Brickley, pers. comm.) found that individuals with osteomalacia were typically poorly preserved and incomplete. Thus, the low levels of osteomalacia in the St Mary Spital population (just one individual, or <0.01% of the population – p120) might be due, in part, to the sampling strategy. Likewise, the low levels of malignant disease might be influenced by the fact that this pathology often affects older adults, who are underrepresented.

The section titled “Framework for analysis and discussion: a bioarchaeological approach” provides as an excellent introduction to many of the key issues in bioarchaeology and paleodemography and a context for this study; it would serve as a valuable introduction to paleopathology for students. This is followed by a brief methods statement, which refers readers to a detailed discussion on the Wellcome Osteological Research Database (WORD) (<http://www.museumoflondon.org.uk/Collections-Research/LAARC/Centre-for-Human-Bioarchaeology/Database/>). The results chapter clearly presents the data for age, sex, metrics and pathology and is supported by numerous informative data tables, and, significantly, the WORD database, allowing researchers to access the raw data. The four phases and two burial types (ABC versus D) are compared throughout, allowing trends in disease prevalence over time, and between ‘attritional’ and ‘catastrophic’ populations to be interrogated. Some areas of pathology could have been investigated in more detail – for example, periapical voids are grouped rather than discussed separately as abscesses, apical granulomas and cysts, and in some places I felt more detailed analysis of the patterns of disease in increasing age groups would have improved the section. Where age groups are compared there is over reliance on Chi-squared tests – here the use of a statistical test for ordinal data would have increased the robusticity of the results (Mays et al., 2002). For some of the less frequently reported pathologies (e.g. chromosomal disorders p133; diaphyseal aclasia, p148) I would have liked to have read a more detailed description – but this clearly was not feasible within the timescale, publication and aims of this project, which takes a populations level approach to bioarchaeology. Detailed descriptions of the

individuals are held in the site archive held at the London Archaeological Archive and Research Centre (LAARC – p 19).

The real strength of the monograph is in the discussion chapter, which successfully weaves together a wide range of historical, archaeological, environmental and modern clinical sources. This is presented as a series of sections addressing key themes in palaeopathology and bioarchaeology: evidence of housing and exposure to pollution in medieval London, specific diseases (such as infections and trauma), childhood health, disability and impairment, and diet and economy. This is followed by a comparison with other medieval cemeteries in London, and then medieval populations elsewhere in Britain and Europe, with the usual caveat that it is extremely difficult to compile true prevalence rates and that crude prevalence rates are dependent on the level of skeletal preservation at a specific site. It is a shame that the scope of the project did not allow for comparison with different archaeological periods (Iron Age, Romano-British, Anglo-Saxon and post-medieval), especially given the excellent temporal resolution within the St Mary Spital cemetery. I hope the authors have the opportunity to investigate this further in the future. On an archaeological note, the skeletal data is presented with reference to period and burial type, but there is no nuanced interrogation of the spatial organization of the cemetery or detailed investigation of the funerary archaeology combined with the skeletal data, such as Gilchrist and Sloane's (2005) investigation into medieval monastic cemeteries. However, this should not be expected in a monograph that states at the outset that it is about the skeletal remains alone. The broader contextual evidence regarding medieval society, religion and economy are discussed in chapter 4, ensuring that the skeletal data is not divorced from its cultural context. The potential of this site for further research is highlighted in Chapter 5.6.

The production values, as I have come to expect from MOLA, are excellent, with many full color photographs and well produced graphs and tables. One small quibble is that a small number of the illustrations were produced at a scale that made it difficult to examine the paleopathological lesions clearly (e.g. figures 143 and 156), but these do not detract from the overall quality of the monograph and the research undertaken. Overall, this is a well-produced book which contains a wealth of data and interpretation and the authors should be congratulated for completing such a herculean task. The paleopathological analysis revealed a range of conditions we have come to expect in medieval populations – with perhaps the exception of leprosy, represented by just two cases, probably due to the exclusion of individuals with leprosy from this London hospital. It also revealed a range of more unusual pathologies such as Reiter's syndrome, ochronotic osteoarthropathy, radioulnar synostosis, joint hypermobility syndrome, diaphyseal aclasia and multiple examples of uncommon pathologies, including 33 examples of osteochondroma, and multiple cases of kyphosis (4), scoliosis (20) and kyphoscoliosis (7), many of which were

probably present, or present in such high numbers, due to the large sample size studied. The authors should be proud of their achievement – the St Mary Spital population will clearly take centre stage in many future palaeopathological studies.

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