Manufactured Bodies: The Impact of Industrialisation on London Health
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The process of industrialization, and accompanying trends of urbanization, effected a profound and remarkably rapid transformation in economic and social conditions, with its impact felt in every aspect of our daily lives including work, diet, housing, sanitation, and even our access to light and air. This book discerns the traces of these conditions on the physical remains of past populations. The result of a three-year intensive research project funded by a charitable bequest via the City of London Archaeological Trust, the authors undertake a detailed skeletal analysis of the health, development and longevity of those individuals who lived through these changes. In his foreword, the Trust's secretary John Schofield cites the historian Eric Hobsbawm's observation that 'The Industrial Revolution marks the most fundamental transformation of human life in the history of the world recorded in written documents.'[1] The contention of this book is that such radical transformations may also be inscribed on our bodies.

Focusing on the period 1750 to 1900 as the era of intensive industrialization, the project also encompasses a longer pre-industrial time frame, to enable comparison and detect long-term trends. It also tracks forward to note the outcome of these changes in the present day. This research had the ambitious aim of gathering and synthesizing a full spectrum of osteological data, particularly radiographs and CT scans, from 2300 skeletons. These individuals come from ten cemetery sites in London, and ten comparator sites from 'non-metropolitan' locales spread throughout England. At the outset, the authors pose the questions 'is industrialization and the connected technology-dependent modernization of our occupations, diets and lifestyles really the cause of health issues we see today? When did these diseases first occur? Were they absent in the past or is it the case that we just aren't aware of any evidence for them?' The questions are pressing, socially-relevant and of interest across many fields, but also challenging in their scope and ambition. The sheer number of variables glossed under the terms 'health issues', 'lifestyles' and 'modernization' make this endeavour difficult. The book largely succeeds in holding these multiple threads together, painting a broad picture of what industrialization meant for our bodies, whilst remaining grounded in the skeletal evidence.

Although both authors are osteologists, the book is cross-disciplinary and highly accessible, it is organized very differently from conventional osteological reports on cemetery sites, or traditional textbooks on skeletal health and disease. A more traditional study would be organized by specific types of pathology, or category of disease. Instead, this book is organized thematically around broader environmental or lifestyle factors, and population-level trends. This allows the authors to integrate a wealth of contextual and historical information, alongside the osteological data, and the technical detail is never overwhelming for the non-specialist reader. For some chapters, such as those entitled 'Getting Fat' or 'Getting Old', the thematic approach works well, as each trend is a useful lens to

[1] E. Hobsbawm, *Industry and Empire* (1990), 14.

consider the multiple physical consequences of our changing environments. Both chapters make a strong case for looking back in time to understand some of our most pressing present-day health concerns.

However, the first chapter on occupational hazards, interpersonal violence, and other causes of injury, such as traffic accidents, does not cohere so well. The scale of the study, the breadth of periods and locations, and the sheer number of variables that could account for a fracture on a human bone, makes it hard for any strong conclusions to emerge, especially conclusions that link clearly to the process of industrialization. In contrast, the chapter on air pollution is extremely focused and highly revealing, documenting the occurrence of a specific skeletal indicator of lung disease – a distinctive lesion on the inner surface of the ribs. It convincingly shows how the appearance of these lesions sees a dramatic spike in industrial London, occurring at more than ten times the frequency than in pre-industrial, rural areas. The authors further show that even within London, class and socio-economic status was a huge factor in determining ones exposure to air pollution. The data strongly foreshadows our current urgent concerns for the impact of inequality on health. Contrasting neighbourhoods such as high status Chelsea and lower status Bethnal Green, the results suggest that Londoners were not all in it together.

The book is highly readable with a thoughtful and direct writing style, arriving at strong conclusions. Of central importance, it is consistently respectful of the dead, individuating them through their complex life histories and relatable life events. By constantly bringing the discussion of health and environment right up to the present day, it draws these past populations closer. It is visually arresting, with striking images on nearly every page, drawing on diverse historical sources. The visual presentation of numerical data is particularly good. Large volumes of data have been presented in a way that is clear and appealing, and the significance of graphs and should be readily accessible to students and non-experts, even those who do not usually read data-heavy texts. Although, for a study that utilized cutting edge imaging techniques, there are arguably not enough images of human bones to illustrate all the conditions discussed. Archaeologists and anthropologists already immersed in skeletal analysis would likely wish to see more of the systematic radiographic and CT scans that were undertaken during the project, to evaluate what these techniques contributed, and become more familiar with the skeletal traces of disease and injury when visualized through these methods.

The book will be valuable to a broad cross section of those studying social history, public health, and osteology, and a great resource for those teaching these topics. The inclusion of a glossary and guide to further reading supports this. It will be enjoyed by anyone with a curiosity about London in this period. It succeeds as a crossover book that will hopefully alert a wider range of disciplines about the potential contribution of the systematic study of human remains, and the kind of research questions that can be framed around past populations and the archaeology of the recent past. In this respect, it draws on the strengths of the Museum of London, whose researchers have a distinguished track record in

this kind of integrated and accessible study of London's dead, bringing past peoples directly into the history of their city.