Documented Skeletal Collections in the United States

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Contributor: Francisca Alves Cardoso, Vanessa Campanacho

In the US, documented skeletal collections are a collective of human skeletons that originated (mostly) from body donations, human taphonomy facilities (e.g., the William M. Bass Donated Skeletal Collection), and anatomical dissections (e.g., Robert J. Terry Anatomical Collection). These collections are a major asset in the testing and development of methods used to infer the biological profile of human remains.

Keywords: anatomical collections ; human taphonomy facilities ; body donations ; documented collections

1. Introduction

Documented skeletal collections are intimately related to the development of American forensic sciences, specifically forensic and biological anthropology. Some of these collections include the well-known Robert J. Terry Anatomical Collection and the William M. Bass Donated Skeletal Collection. Most of the human skeletons incorporated into these collections come mostly from body donations, cadaver dissections, medical schools, and private collections. The collections are composed of varied body elements that include complete to almost complete skeletons, specific anatomical regions, e.g., single bones, some related to pathological skeletal specimens.

2. The Documented Skeletal Collections in the United States

The conceptualization behind the origins of documented skeletal collections is correlated with the mentoring relationship among different generations of anatomists and anthropologists [1]. Alongside the interest in building the collections for teaching, many collections had an underlying intention in line with the attempt to assembly enough specimens representative of human morphological variability. George S. Huntington and Sir William Turne mentored Robert J. Terry who was responsible for the implementation of the R. J. Terry Anatomical Collection in 1910 [2][3]. Huntington, when at Columbia University collected between 7000 and 8000 human skeletons from unclaimed individuals between 1893 and 1921 [4]. This is representative of the interest in documented collections in US high education institutions. Nowadays, circa 3070 partial skeletons that remained from the Huntington Collection are housed at the National Museum of Natural History [5][4]. There are many other collections built with unclaimed skeletonized human remains. However, from1968, and in the aftermath of the Uniform Anatomical Gift Act (UAGA), which standardized the anatomical laws across the US, many modern documented skeletal collections began to be built via body donation programs. People began to leave their bodies for science and/or transplants after death [6], giving rise to the growth and development of many more documented skeletal collections.

The modern documented skeletal collections also represent a shift in the research agendas. If former collections targeted human skeletal variability, modern collections are linked with the study of human decomposition in forensic sciences, age and biological sex assessment methodologies.

The first human decomposition facility was created, in 1980, by William M. Bass, a renowned forensic anthropologist at the University of Tennessee [7]. Known as the Forensic Anthropology Center, its mission was to lead research in human decomposition, advance forensic anthropology, training and educate generations, as well as provide consulting services in forensic sciences [8]. This center is also associated with the creation of one of the largest collections of modern documented skeletons - the William M. Bass Donated Skeletal Collection [7][9].

3. The Research Value of Documented Skeletal Collections

Documented skeletal collections were, and continue to be a major resource for forensic anthropology [10]. Some of the know collections are the William Montague Cobb, Aleš Hrdlička, Robert J. Terry, Thomas Wingate Todd, and Mildred Trotter [2], among others.They contain not only human remains, but also detailed information about the individuals that compose the collections. These collections have enabled much of the research development of forensic anthropology

over the past century that otherwise would have been challenging. The practice of forensic anthropology requires an accurate estimation of biological sex, age at death, living stature, and assessment of morphological variability aiming to infer ancestry. Accredited methods associated with these estimations have all benefited from research developed in documented collections.

4. The Educational Value of Documented Skeletal Collections

Alongside research, documented collections also offer training opportunities for professionals and students [11]. The possibility of training methodologies using real human remains, of known biological parameters (e.g. sex, age-at-death) is a privilege offered by the collections. Such experience is extremely useful for forensic anthropologists preparing for practical certification examinations, victim identification, as well as other researchers engaged in the study of human remains associated with the Social Sciences, Humanities, Biological and Medical Sciences.

Some collections are also associated with Forensic Anthropology Facilities which yield added valuable opportunities for students, and professionals, to be educated and trained on field recovery, taphonomy, and human versus non-human identification. For example, within the frame of a body donation program, the University of Tennessee offers its students training through the simulation of forensic field experiences in the recovery of human bodies [8]. The experience extends to the opportunity of preparing (e.g. clean and label) human skeletons for curation within the facility curation [8].

5. Ethical Concerns

Growing ethical concerns on the inclusion of remains from unclaimed individuals into documented skeleton collections are becoming extremely important. One of the major ethical issues that has been addressed, and continues to be discussed, is the fact that in some cases the source of cadavers came exclusively from the most vulnerable sector of the population [4]. Unclaimed cadavers were procured in poorhouses, hospitals, morgues, prisons, long-term care facilities, and mental institutions [5][12][6]. Such a practice allied the establishment of many anatomical collections with the concept of structured violence, in which social and structural violence against marginalized individuals would be reinforced [13]. This finds truth in the fact that many of the human remains collected, and incorporated into these collections are those of impoverished and marginalized individuals, especially African Americans, European immigrants, and individuals that partook in the Great Migration [5].

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