

Chapter 4

An Overview of the History of the Excavation and Treatment of Ancient Human Remains in Egypt



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Egypt has an extremely rich and varied past, encompassing millennia of human history, and, as a result, is a huge repository of human remains. These remains take two main forms: skeletons and mummies. Skeletonized remains tend to belong to early Egyptians who were buried prior to the invention of mummification, and to poorer individuals who were not mummified, and whose artefact-poor cemeteries were less the focus of archaeological investigation by museums, collectors, and plunderers. Some skeletons are the result of poor mummification. In the early days of Egyptian archaeology, these were of less interest than mummies.

A mummy is the artificially preserved and wrapped body of a human being (or animal). Mummies have been virtually synonymous with ancient Egypt and historically have attracted more attention than excavated skeletal remains. Mummies have had a long and chequered history beyond that of archaeological artefacts, being viewed as oddities collected by the curious, or objects to be robbed of their amulets and jewels. Due to the misidentification of the black substance that covered Egyptian mummies as bitumen or *mûm* in Arabic (which was the basis for the word ‘mummy’), a component of many medicines, twelfth-century AD Arab physicians used ground-up mummy as part of their *materia medica* as a cure against paralysis, hemicrania, epilepsy, and abscesses, among other diseases. Western physicians followed suit with enthusiasm and pulverised mummies to use in medicines well into the eighteenth century if not beyond (Ikram and Dodson 1998: 64–8). In addition to being ground up for medicine, the powder has been used as a component of paint (mummy brown); mummies have been burned as fuel and their wrappings used to make brown paper (Ikram and Dodson 1998: 64–9; Wolfe and Singerman 2009). Thus, vast numbers of mummies that were potential sources of information have been lost over the centuries.

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Initial Mummy and Skeletal Studies

A few scholars who wanted to learn about the ancient Egyptian art of embalming, to look upon the faces of the ancients, or to study the anatomy of the ancient Egyptians, unwrapped and examined mummies, with varying amounts of scientific rigour. Some were antiquarians, while others were medical men with different degrees of training, depending on the era in which they lived, as well as their own limitations. The earliest published mummy unwrappings occurred in 1698 under the direction of the antiquarian Benoit de Maillet (De Maillet and Le Mascrier 1735: 277–85), but the focus was more on the mummy as an object rather than a human being, with attention concentrated on the quality of linens and any artefacts found within the wrappings—some removed from the body by brute force. Only a handful of unwrappings were more scientifically oriented, with a desire to analyse the body as well as the embalming methods used on it (Ikram and Dodson 1998: 64–72; Ikram 2015/2016; Ikram 2011). It should be noted that often, anonymous mummies were treated differently from named individuals with grave goods; as with the latter, there was a greater interest in the life history of the deceased, as understood from his or her physical remains and funerary equipment, and thus more care and attention were taken during the process.

Scientific unwrappings truly took hold in the nineteenth century, with the physician Thomas Pettigrew (1791–1865, also known as ‘Mummy Pettigrew’) leading the way in mummy studies (Pettigrew 1834) and other doctors, such as Augustus Bozzi Granville (1825), who was the first to report a cystic ovarian tumour he discovered in a mummy’s abdomen, following close behind. Historically, the royal mummies were one of the more significant groups of mummies to be studied and were examined by Egyptologists and medical doctors from the 1880s onward (Maspero 1889). A definitive work on these individuals (and mummification in general) was carried out by Grafton Elliot Smith (1871–1937), Professor of Anatomy at Cairo School of Medicine (Smith 1912; Smith and Dawson 1924), which also involved the first radiograph of a mummy to be carried out in Cairo. Elliot Smith conveyed, by a horse-drawn cab, King Tutmosis IV (reigned c. 1398–1388 BC) to a private nursing home in Cairo, where Dr. Khayat x-rayed the king, making him the first royal mummy to be thus examined. From the 1960s onward, radiography of different sorts has been commonly employed in the study of both royal and nonroyal individuals.

Until the early years of the twentieth century, scholars largely ignored skeletonized remains as a source to elucidate the history, culture, lives, and health of the ancient Egyptians. However, some did study them for questions of race, ethnicity, brain capacity, and other variables, some of which helped legitimise colonial domination and racial stereotyping. For example, the physician (anatomist) and anthropologist S. G. Morton (1799–1851) subjected three ancient Egyptian mummies to craniometric analysis in an effort to identify their race (1844), using a system of measurement popular with anthropologists of that time. Morton believed that multiple races were created separately, each with distinct characteristics, feeding into a narrative of biological dominance/subservience. He thought that intellectual ability

was linked to skull capacity, with size being the determining factor. By his methodology (criticised by Gould 1981 and re-evaluated in support of Morton's methodology, if not content, by Lewis et al. 2011) Caucasoids were the most intelligent and Negroids the least. According to him, ancient Egyptians were Caucasians. W. M. F. Petrie, the doyen of Egyptian archaeology, also graphed cranial measurements in order to establish racial superiority (Petrie 1902); interestingly, the Egyptians remained in the highest category of intelligent beings, and Petrie posited that an early migration from Europe contributed to the population of Egypt (this did nothing to serve colonial domination of Egypt but was symptomatic of anthropological studies of the time). Petrie's results in identifying Egyptians solely as Caucasians were challenged by his colleagues (Brunton 1925; No Author 1926, but see reference to Caton-Thompson). Interestingly, he was an advocate for encouraging in his own day the immigration of other races to England as a source of vigour that would continue to help make Britain great (Challice 2013).

Although some of the earliest and most intense study of Egyptian skeletal material was indeed linked to race, much of it was focussed on what is now standard physical anthropology: the determination of age, sex, disease, and mortality rates in populations. These, together with the archaeological context, also informed ideas about gender, age, and socio-economic status.

G. E. Smith, who studied the royal mummies, also supported the idea that skull capacity and brain dexterity were related (some of his ideas of brain evolution, particularly with regard to primates, are still relevant today) and used his knowledge of ancient Egyptian culture together with observations of their cranial measurements to support his idea of hyperdiffusion. He believed that cultural innovations occur once and are spread from this single source. Thus, he based the origins of many aspects of culture, tradition, and technology to the ancient Egyptians (Smith 1929, 1931). Leaving the hyperdiffusion aside, Smith remained at core an anatomist and a rigorous medical man, having been trained in Britain and holding a position as anatomist in the medical school at Cairo. When the first Nubian dam was being constructed in 1898, threatening to flood vast areas, he became the official advisor on the study of physical anthropology/human remains to the Archaeological Survey of Nubia. He participated in the Archaeological Survey of Nubia, excavating cemeteries and, together with his colleagues, examining some 6000 bodies using what is now considered a standard physical anthropology approach, involving the recording of age, sex, disease, and population studies (Smith and Wood-Jones 1910). Virtually all those who worked on human remains in Egypt, both in terms of mummies and skeletons, were medically trained, most with specialisations in anatomy, for example, Frederic Wood-Jones (1879–1954), who later went on to become the first Professor of Human and Comparative Anatomy at the Royal College of Surgeons in 1945, after a distinguished medical career. Similarly, Douglas Derry (1874–1961), working with Smith as Assistant Professor of Anatomy at the Government School of Medicine, Cairo, was a medical man who also served as an archaeologist. In 1923 he was the first person to examine the mummy of Tutankhamun, with the report being published posthumously. He, more than anyone else, was responsible for the training of scholars in the study of human remains and together with his student,

Ahmed Mahmud el-Batrawi (see below), increased the archaeological anatomical collections (both skeletal and mummies) of the medical school, as well as being largely responsible for the anatomy collection and museum.

Excavating and Examining Human Remains in the Twentieth Century and Beyond

The Nubian campaign, with large-scale cemetery studies, marked a watershed in the study of human remains. In archaeological expeditions, increasing attention was given to the study of both mummified and skeletonised remains as a matter of course. The emphasis was to extract a bio-history of the individual as well as to better understand populations, diseases, and familial relationships, although cranio-metric studies persisted in parallel for some time. The analyses of the remains generally were carried out by medical practitioners, rather than by physical anthropologists. This bias toward medical professionals continued with the advent of palaeopathology, when tissue samples taken from mummies were analysed to identify organs as well as to isolate diseases (Ruffer 1911, 1921). The majority of scholars working on the Egyptian remains were western, although, with time, some of the recently trained non-western doctors participated in the analyses (the first medical school in Egypt was founded in by the Frenchman Clot Bey in 1827, by decree of Muhammad Ali Pasha, and was associated with the military; fully trained Egyptian professors were only common after the 1880s (Abugideiri 2016; El Dib 2015; Mahfouz 1935)). One of the most prominent of the Egyptian anatomists to work on archaeological material was Ahmed Mahmud el-Batrawi (1902–1964). He studied medicine at Cairo University's Medical Faculty and, after graduation, worked with Derry (see above) as his assistant at the Anatomical Institute of Cairo University. He too collaborated with archaeologists, working on and publishing the results of excavations in Nubia. Subsequently he carried out postgraduate work in London in anatomy and then became one of the first Egyptian anatomists to obtain a Ph.D. in anthropology. Upon his return to Egypt, he became a professor of anatomy and maintained close ties with archaeologists, both from the Egyptian Antiquities Service, as well as foreign excavators.

Cemeteries and graves that were excavated tended to be ancient Egyptian or Coptic, with some Islamic interments also being examined, if they were of sufficient antiquity. Due to religious sentiment, Coptic and Islamic cemeteries that were in use, regardless of their antiquity, were never a source for studying the past. All scholarly work was carried out under the auspices of the Antiquities Service, in its various forms, most recently the Ministry of State for Antiquities. In addition to the Antiquities Service's own excavations, foreign museums and universities, as well as private individuals, excavated throughout Egypt, after obtaining the necessary permits. Most of these groups did not bring in their own experts on human remains but depended on those working in conjunction with the Antiquities Organisation, such

as Derry and Batrawi and others trained in the Cairo medical school, especially since those people had considerable experience in dealing with mummies and skeletons and could carry out any necessary tests/analyses locally. Even after the revolution of 1952, with the expulsion of the British and the end of the Egyptian monarchy, when the traditionally French director of the Antiquities Service had been replaced by an Egyptian, this construct continued, with the Cairo and Alexandria medical schools providing specialists on human remains to work with all archaeological groups. Some of the non-Egyptian specialists who had operated during the Egyptian monarchy and the era of the British protectorate stayed in Egypt and continued working on human remains, with Egyptian doctors also participating in the work. However, with a decrease in local interest and expertise in the late 1960s and early 1970s, because of the retirement and death of many of those working on human remains in Egypt, and possibly because there was an increase in the number of expeditions working on cemeteries, more and more expeditions started to bring in their own anatomists/physical anthropologists to augment those who were locally available. These scientists reflected the education and mores of their home countries and training, as is seen in their publications, with theoretical approaches and ideas differing between the various European and American scholars.

In 1956 the National Research Centre of Egypt was founded to carry out scientific research, focussing on industry, agriculture, public health, and other sectors relating to the national economy. In time, a few of the scholars involved in medical and anatomical research extended their interest to archaeological remains and intermittently started to collaborate with archaeologists, particularly from the late 1970s onward. Their laboratories were also used by the Antiquities Service.

The Antiquities Service (renamed the Egyptian Antiquities Organisation in 1971, then the Supreme Council of Antiquities in 1994, and most recently the Ministry of State for Antiquities in 2011) did not have a separate branch dealing with human remains. However, their research and conservation branch was involved with mummy conservation from 1971 onward, with notables such as Zaki Iskander (who was working on mummy conservation even before 1946), Nasry Iskander, and Samia Merghani. They worked on establishing protocols (which continue to evolve) for the care of human remains, based on the practicalities present in Egypt (both in museums and the field), as well as building on their experiences in Egypt and abroad, and discussions with international colleagues. They also established laboratories that could perform ancillary analyses. Merghani, unusually, was trained in conservation as well as physical anthropology (the latter in Russia) and thus also worked on excavations in the latter capacity, founding the Anthropological Studies Laboratory within the Centre of Research and Conservation of Antiquities in 1994. It was perhaps due to her training and the increasing recognition by the Antiquities Organisation for the need for permanent qualified personnel and for establishing protocols to deal with human remains that human remains and organics became a growing concern, coupled with an increased interest in the subject by foreign missions working in Egypt. Thus, a branch of the research and conservation department of the Antiquities Organisation concentrated on microbiology, pest control (particularly in dealing with organic remains), mummy maintenance, and, to a lesser

degree, anthropological studies. Regrettably, the majority of people working in these laboratories came from a conservation background, as even today there are no full degrees granted in physical anthropology in Egypt; interested individuals obtain training in anatomy and biology (at many national universities), and some attend courses on bioarchaeology at the American University in Cairo, and Alexandria University.

Over the last 15 years, a concentrated push has been made to send people abroad to study, more anatomists have been encouraged to engage with archaeologists, and foreign institutes, archaeological missions, and universities have offered scholarships, as well as held intensive training programmes in Egypt to encourage the study of human remains, with an increase in the use of radiology, both on-site and in museums (see Aufderheide 2003 for how mummies are studied). Since 2014, the American University in Cairo, the University of Zurich, and the Institute of Bioarchaeology have hosted training programmes in bioarchaeology, in cooperation with the Ministry of Antiquities, the National Research Centre, and UNESCO. In addition to standard physical anthropology, the training has included different types of imaging, palaeopathology, histology, chemical analyses of mummification materials, ethics, and aDNA work. The American University in Cairo, in conjunction with the Institute of Bioarchaeology (an international body), and the American Research Center in Egypt have hosted two major international conferences on human remains and bioarchaeology in Egypt in Cairo, with a third one planned for 2019. All of this activity has given birth to a small core of professionals, and in 2017, the Ministry of State for Antiquities has founded a unit for the scientific study of human remains, headed by one of these professionals.

Although at this point there is no academic programme dedicated to the study of ancient remains, those who are interested follow the track of anatomy and anthropology in the national universities, augmented by special courses (including work in the field) offered at the American University in Cairo, by the different archaeological institutes (French, American, German) or excavations. As international standards of dealing with human remains have become increasingly standardised, there is a marked increase in collaboration between professionals from all the different countries working in Egypt and their Egyptian colleagues.

Trends in the Study of Human Remains

Although in the sixteenth to the eighteenth centuries antiquarians, archaeologists, and anatomists were more interested in studying Egyptian mummies rather than skeletal material, both have been and continue to be studied in Egypt. Indeed, the study of skeletal material is far more straightforward than the study of wrapped remains. Mummies, however, still get more public attention, possibly based on their curiosity value and the way in which they continue to be portrayed in films. For scholars, however, they also sometimes prove to be more engaging than skeletal remains as they are often the bodies of the elite, coming from tombs that contain autobiographies (albeit written for the public), genealogies, and grave goods, all of

which flesh out the deceased and also provide textual and physical checks on what the body reveals, thereby creating more complete biographies of the dead. For individual burials, particularly those without a tomb assemblage, interest often focuses on the basic issues: sex, age, and disease. However, since the end of the nineteenth century and the start of the twentieth century, when large-scale cemeteries have been systematically studied, larger population histories have been a focus. Increasingly, in addition to demographic and palaeopathological studies, large-scale studies on diet, migration, weaning histories, and ethnicity are standard (see, e.g. Dupras et al. 2001; Wheeler 2010; Tocheri et al. 2005; Ikram et al. 2015; Dabbs and Schaffer 2008). Currently, nonelite cemeteries are being sought out actively, such as at Amarna,¹ to obtain a better understanding of the life histories of workers, peasants, and the nonelite in general.

Ancient DNA studies are also being carried out in Egypt and abroad. Former Minister of Antiquities, Zahi Hawass, with an international team, worked on the DNA of the royal mummies (2010, 2012) in Egypt in order to establish family relationships and to identify some anonymous individuals. These, like many other DNA studies, came under criticism (e.g. see letters by various people in the *Journal of the American Medical Association*, 2010, 303.24: 2471–2475, and for an overview, see Marchant 2011). Since then, no other aDNA studies have been carried out in Egypt as there has been limited access to the laboratories. However, DNA analyses on Egyptian remains have been done abroad, with one recent study on origins of an Egyptian population yielding some positive results (Schuenemann et al. 2017). Of course, it is possible that these studies, too, will come under scientific criticism as is so frequently the case. The results of DNA studies, though, are not always welcome in Egypt due to nationalist and political issues (see, e.g. Marchant 2014; El Aref 2017; Hawass 2017), which have historic roots, sometimes based on misunderstandings (Hamdy 2000).

Laws and Attitudes Toward the Study and Display of Human Remains

The study of human remains in Egypt has largely been the purview of western-trained physicians and anatomists, as well as physical anthropologists and, indeed, mainly of westerners (Ikram 2015/2016). To some extent this might have its roots in a religious avoidance of disinterring, defleshing, and studying the dead, as well as a greater need for Egyptian physicians to ply their craft on the living. Physical anthropology did not exist as a discipline in Egypt until relatively recently, with no degrees being awarded in it even today, mainly due to insufficient demand. It is only recently (see above) that there is an increased interest in the study of human remains. It is hoped that soon this might lead to the establishment of university degrees in the field, both in national and private universities.

¹ See <http://www.amarnaproject.com> for a list of publications as well as online publications of the material.

Permission to study human remains, and how to do this, traditionally lies with the Antiquities Service/Ministry, with foreign missions' requests being vetted by a committee. The degree of interest and control over the study of human remains increased in the 1990s, linked to the founding of the Anthropological Studies Laboratory. Realistically, however, the number of trained personnel to oversee or work with foreign experts and expeditions was severely limited, so actual collaboration and results were limited to non-existent. This has changed in the last 5 years and will no doubt change even more after the 2017 foundation of the human remains unit. Ideally, collaborative work should be supported and urged, although a nationalistic wave might increasingly limit work on human remains to Egyptian scientists. Indeed, published results of studies of Egyptian human remains often elicit nationalistic rather than scientific responses (e.g. the furore on the internet/social media created by the Schuenemann et al. 2017 article on Egyptian DNA and the origins of the ancient Egyptians), underlining the continuing political and sensitive nature of the study of human remains.

A further complication in the study of human remains is the fact that permissions for excavations and the study of remains must go through not only the Ministry of State for Antiquities, which has an understanding of the information that might be obtained about the ancient Egyptians through the study of their physical remains, but also the National Security forces, who are less aware of the scientific worth of such analyses. Although sampling of different sorts is often permitted, the export of samples is generally denied, regardless if the request is made by an Egyptian national or by a foreign scholar. Until Egypt has the necessary technologies to carry out all the tests needed to study human remains in all their guises (aDNA, gas chromatography mass spectrometry, C-14, isotope analysis), or the export of samples is permitted, advances in the study of human remains in Egypt will suffer.

The debate about the study of human remains has recently (after the 2011 uprising) become more topical, partially due to the looting of archaeological sites, primarily cemeteries (Ikram and Hanna 2013; Hanna and Ikram 2013). Considerable metaphoric ink has been spilled on social media debating the pros and cons of digging up human remains and displaying them. More religious people (both Christian and Muslim) are often against digging up and displaying human remains (regardless of whether they are skeletons or mummies), but public opinion regarding this question does not follow any socio-economic or even religious lines, as evidenced by the people commenting on the subject in social media as well as based on the results of informal surveys carried out as part of these discussing whether human remains should be studied and/or displayed (see below). Interestingly, although there are demands for repatriation of artefacts, there has not been a huge outcry for the return of human remains.

The ethics of displaying human remains, particularly mummies, has been the subject of discussion for well over a hundred years. This is most clearly seen with the history of the royal mummies, which have been put on display or removed from it, depending not only the decorum of the time but also on the political and economic agendas and viewpoints of the last 60-plus years (Ikram 2017). Currently, the ethics of studying and displaying mummies is also widely debated in social media

and has been the subject of MA theses in Egyptian institutions of higher learning. As yet there are no laws defining how human remains are studied or displayed, although decisions about these are made by governmental agencies, be they the Ministry of State for Antiquities or the State Security. It is increasingly clear, however, that concentrated and rigorous study of human remains is crucial, and thus, more than ever before, bioarchaeology is working in tandem with archaeology in order to obtain a better understanding of the culture, ethnicity, diet, disease, belief systems, age, gender, and socio-economic status of the ancient inhabitants of Egypt.

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