

# Chapter 9

## The Collection of Egyptian Mummies in the British Museum

### Overview and Potential for Study

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#### Introduction

The collection of Egyptian mummies at the British Museum is one of the most comprehensive of its kind in the world and enjoys a high public profile. These embalmed bodies have long been a prominent feature of the permanent displays, with the ‘mummy galleries’ attracting more visitors per year than any other area of the Museum’s public space. While they have had a major impact on public perceptions about ancient Egypt, the mummies as a whole have not been consistently studied. Earlier handbooks to the collection (British Museum 1924; British Museum 1938) are far from exhaustive, and even the definitive catalogue of the mummies (Dawson and Gray 1968) offers only selective coverage, omitting many incomplete bodies. A consistent research strategy for this important collection is therefore needed. This chapter aims to provide some of the groundwork, by presenting a brief profile of the collection, tracing the history of its formation and outlining previous research on the mummies. Finally, it offers observations on the potential for future research on this collection, highlighting some of the factors which may impose constraints on investigators.

#### Formation and growth of the collection

The development of the British Museum’s collection of Egyptian mummies followed a course similar to that in other large and long-established European national museums, such as that of the Rijksmuseum van Oudheden in Leiden, reflecting the changing patterns of access to mummies and the differing priorities and interests of collectors, archaeologists and anthropologists. As the following summary will make clear, the available documentation on the recent history of the mummies is often incomplete.

#### 1753–1820

The first mummy to enter the British Museum was part of the founding collection of Hans Sloane, acquired by the nation in 1753. It comprised a small wrapped bundle in a painted wooden coffin, and was an example of a type which has been subsequently shown to be (at least in part) a fabrication made from ibis bones and scraps of ancient mummy wrappings (Blumenbach 1794). This was followed in 1756 by two complete and authentic mummies – one the bequest of Colonel William Lethieullier (1701–56) and the other donated by his nephew Pitt Lethieullier. William Lethieullier’s mummy and its coffin had been obtained in Egypt in 1721 (Bierbrier 1988, 220) and were well documented through engravings made by George Vertue in 1724 and by Alexander Gordon in 1737. The mummy EA 6694 appears to be one of those presented by the Lethieulliers; on the evidence of its outer trappings it has been identified as the ‘Pitt Lethieullier mummy’ (Bierbrier 1988, 223), but the body actually bears two different sets of cartonnage coverings, evidently put in place following a crude opening and investigation of the mummy (perhaps that made by Blumenbach in 1792, see below p. 108), so its identity cannot be satisfactorily proven. The second of the two Lethieullier mummies is not traceable in the collection today. In 1766 another mummy, sent from Egypt by Edward



**Plate 1** Small ‘pseudo-mummy’ in a case made from pieces of ancient coffins – one of a number of forgeries which entered the collections of European antiquaries in the 18th century. British Museum, London (EA 6952)

Wortley Montague (1713–76), was presented to the British Museum by King George III (EA 6696). All of these mummies probably came from the Memphite necropolis, near to Cairo, the principal source of such remains in the 18th century when Upper Egypt was as yet rarely visited by Europeans. Another mummy in the collection, donated by the Earl of Bessborough (EA 6957), may have been brought from Egypt even earlier, as anecdotal evidence states that it was once in the possession of Nell Gwyn (1650–87), mistress of Charles II (British Museum 1924, 135), but this was not acquired until 1836.

Records of acquisitions of other mummies in the 18th century are lacking, but by 1792 the collection included four ‘large’ mummies and two additional small ones besides the Sloane specimen – these latter two (EA 6952–3) were obtained probably in 1772 from the collection of Sir William Hamilton and, like the Sloane example, were also ‘pseudo-mummies’ (Blumenbach 1794, 179; Quirke 1997, 254–6) (Pl. 1). In Montagu House, the British Museum’s first home, Egyptian antiquities were displayed to visitors very much in the style of elements in a cabinet of curiosities, without context or relation to any historical framework. Prominent among these were two large and two small mummies, which attracted much attention (Moser 2006, 46–53).

#### **1820–1840**

Napoleon Bonaparte’s expedition to Egypt (1798–1801) and the discovery of the Rosetta Stone opened the country’s rich heritage to the wider world. The end of the Napoleonic wars coincided with a phase of increasing stability in Egypt under Mohammed Ali, and in the following decades European travellers visited the ancient sites and collected antiquities. The cemeteries of Thebes became the main focus for the acquisition of well-preserved mummies, many of which

entered the collections of prominent diplomats such as the consuls Henry Salt, Bernardino Drovetti and Giovanni Anastasi. The British Museum subsequently obtained some of these collections in whole or in part, with a view to extending the comprehensiveness (and thereby the instructional value) of its holdings, although the desire to maintain national status in a rapidly advancing field of knowledge also drove acquisition. Mummies were also obtained from other collectors and travellers, some of which were ultimately sourced from the same antiquities dealers and agents who supplied the consuls, and hence some of the mummies which passed into public collections at this time can be traced to a common find context.

Prominent among the sources of mummies which were acquired by the British Museum during this period were four substantial collections.

The first collection of the British Consul in Egypt, Henry Salt (1780–1827) (acquired piecemeal between 1816–21, purchase finalized in 1823), probably included at least six mummies, but only two (EA 6707, 6713) are clearly identifiable in contemporary documents. A list of items dispatched to England clearly identifies EA 6707, and in letters written by Salt from Alexandria dated 5 and 10 October 1821 he mentions that he was sending to England four large cases containing ‘mummy cases’ (British Museum, Department of Ancient Egypt and Sudan archives, AES Ar. 235). One of these shipment cases contained ‘two Greek mummies’, one with a portrait in tempera which is recognizable today as EA 6713. Salt adds: ‘two of the other Egyptian mummies are very fine, & having been found by my Greek servant [i.e. his agent Giovanni d’Athanasia], have never been open’d’. Early museum records suggest that EA 6659, 6660, 6666 and 6723–4 were part of the first Salt collection, so these and

perhaps others may have been among the mummies dispatched to England in October 1821.

The first collection of the traveller and collector Joseph Sams (1784–1860) was purchased in 1834. The *List of Additions* (1837, 427) records that this collection contained ‘six human mummies, with cases’ (cf. Anonymous 1833, 313). Although there are two contemporary manuscript lists of this collection, neither give full descriptions of the mummies or their coffins, with the result that only two of the mummies can be firmly identified today: EA 6662 and 6676 (recognizable by the descriptions of their coffins, and by the fact that the coffin of 6676 bears an old paper label, ‘SM’, used as an abbreviation for ‘Sams’; the ‘Salt 1835’ label painted on this coffin is erroneous). There was also a seventh mummy, enclosed within a Late Period stone sarcophagus (Anonymous 1833, 312), which a manuscript list notes had been added by Sams (British Museum, Department of Ancient Egypt and Sudan archives, AES Ar. 257). This could be EA 6697, a mummy attributed to Sams but not associated with an identifiable coffin; however, it could equally well be one of the ‘six human mummies, with cases’.

Six mummies were acquired from the third collection of Henry Salt, auctioned by Sotheby’s in London in 1835 (his second collection having been sold to the French). Five of them are easily identifiable from the descriptions in the sale catalogue and from records which show that these particular lots were purchased by the British Museum (EA 6665, 6679, 6704, 6711, 6715 = Sotheby & Son 1835, lots 150, 852, 580, 1269, 149 respectively). The sixth mummy is EA 6680, identified as from ‘Salt 1835’ in Samuel Birch’s manuscript catalogue of the British Museum’s Egyptian antiquities. Although it has no coffin, it can be plausibly identified with the mummy described under lot 986 in the sale catalogue, which was at that time associated with the much earlier coffin of Nubkheperre Intef (EA 6652; Sotheby & Son 1835).

The second collection of the Swedish-Norwegian consul Giovanni Anastasi (1780–1860), purchased in 1839, also contained six mummies, five of which are clearly identifiable from contemporary manuscript lists: EA 6669, 6673, 6682, 6699 and 6714 (British Museum, Department of Ancient Egypt and Sudan archives, ‘Acquisitions of Antiquities 1839’). The sixth mummy was contained within the cartonnage case EA 6686, but the case is now empty and the mummy is no longer identifiable; a note in the minutes of the Trustees’ Standing Committee authorized the destruction of a mummy from the Anastasi collection in 1843 because it ‘had been attacked and rendered worthless by insects’, and this was presumably the specimen in question.

Among mummies acquired individually was that of a child, obtained from an unnamed source in 1831 (*List of Additions* 1833, 119). It is not identifiable today, although it might be equated with either EA 6709 or EA 6717, neither of which has a secure provenance. Another mummy (EA 6692) was acquired in 1835, having been purchased in Egypt from Giovanni d’Athanasia by Alexander Turnbull Christie in 1832. The Earl of Bessborough presented the mummy said to have belonged to Nell Gwyn in 1836 (EA 6957) and in 1838 Richard Howard Vyse donated a naturally preserved body, of medieval date, which he had discovered in the Third Pyramid at Giza (EA 18212).

Mummies and coffins occupied a prominent place in a new display of Egyptian antiquities which was opened at the British Museum in 1838. Here the exhibits were arranged on a taxonomic basis, and since hieroglyphs could now be translated, many of the mummies were identified by name from the inscriptions on their coffins and tentatively dated, but little attention was paid to provenance and the circumstances of their discovery. The 1840 *Synopsis of the Contents of the British Museum* lists more than 30 mummies that were displayed in the Egyptian galleries in that year (*Synopsis* 1840, 268–71, 286–96). The majority are identifiable today, but several mummies which are known to have been acquired before that date lack secure provenance, including EA 6681, 6709, 6712, 6716, 6717 and 6718. Most of these should probably be attributed to the first collections of Henry Salt and Joseph Sams, for which fully reliable lists do not exist. The mummies acquired between 1820 and 1840 reflect the principles of selection which motivated the collectors of the time, who generally sought only specimens with fine or decorated wrappings and visually attractive painted coffins. Few, if any, were collected on account of their ‘archaeological’ significance.

### 1840–1930

Between 1840 and 1880, when the Egyptian collection was under the authority of Samuel Birch, the Keeper of Oriental Antiquities, fewer mummies were acquired by the British Museum. With the advent of Auguste Mariette, the founder of Egypt’s *Service des Antiquités* in the 1850s, Egyptians were encouraged to value their own pharaonic heritage, and greater restrictions were imposed on the export of antiquities. Moreover, papyri and objects of daily life were increasingly regarded as more desirable for European museums than mummies and sarcophagi. However, after the death of Mariette in 1881, excavations intensified not only at Thebes, but at Akhmim as well as at cemetery sites in the Faiyum, and relaxation of restrictions led to a larger number of antiquities again leaving Egypt. Many mummies passed on to the art market and some were disposed of officially through the ‘sale room’ of the Cairo Museum. E.A. Wallis Budge (Assistant Keeper and subsequently Keeper of the Department of Egyptian and Assyrian Antiquities) pursued an active policy of collecting for the British Museum, making regular visits to Egypt between 1886 and 1913, and acquired 27 mummies in line with a clear strategy: in 1898 the Trustees recorded: ‘It has been Mr Budge’s aim during some years to form a complete typical collection of mummies and coffins of the various periods of Egyptian history’ (Minutes, Trustees’ Standing Committee 12 March 1898).

Budge acquired mainly from dealers, and he viewed the mummies primarily as potential exhibits, paying little attention to provenance and archaeological context. The huge volume of material which he collected, together with his often unreliable recording, makes it difficult to trace the sources of his purchases, many of which were offered to the Museum through the shipping company of R.J. Moss of Alexandria (Bierbrier 2012, 388). They acted as Budge’s agents, holding items in their warehouses until funds became available, with the consequence of masking the



**Plate 2 Naturally preserved body of an adult male from Gebelein, Predynastic period, c. 3500 BC. British Museum, London (EA 32754)**

identities of some of the true suppliers. Among the items which were acquired from Budge's visits to Egypt from 1886 to 1899 were two Middle Kingdom mummies bought at a village north of Asyut (EA 23425, 29574; Budge 1925, 211; Filer 1999); four Third Intermediate Period specimens (EA 20744, 29577, 29578, 30720); a large number of Late Period, Ptolemaic and Roman mummies from Akhmim (EA 20650, 20745, 29588, 29782, 29776, 29777, 29581); one probably from the Faiyum (EA 24800); and others of unknown provenance (EA 29783, 30362–4). The most striking group of mummies acquired by Budge were the six naturally preserved bodies of the late Predynastic period from Gebelein, although data on their discovery is regrettably meagre (Budge 1920, vol. II, 359–61) (**Pl. 2**). Archival sources indicate that these mummies had been acquired as early as 1898, although they

**Plate 3 Mummy of Ankhef, an adult male, in original coffin inscribed with his name. From Asyut, 12th Dynasty, c. 1950 BC. This is one of the few mummies in the British Museum which has a precise archaeological context. British Museum, London (EA 46631)**



were not formally accessioned until 1900. A seventh was added in 1923 (see Chapter Three, this volume).

During this period, mummies from several archaeological expeditions were presented to the British Museum. In 1888–9, four Roman period mummies came from W.M.F. Petrie's excavations at Hawara – those of the Greek youth Artemidorus (EA 21810), an unidentified youth (EA 13595) and two children (EA 21809, 22108), three of them donated by Petrie's sponsor H. Martyn Kennard and the fourth by the Reverend W. Lawson. Work conducted by the Egypt Exploration Fund at Deir el-Bahri produced two female mummies of the 11th Dynasty, which were acquired in 1904–5, one in fragments (EA 40924–7), the other, that of the lady Kemsit, now lost (EA 41853; see note to **Table 1**). In 1905, from the excavations of John Garstang at Speos Artemidos near Beni Hasan, came an unusual small cartonnage coffin containing a mummy which the excavator hesitantly identified as a monkey, but which is now recognized as a child who suffered from the rare pathological condition *osteogenesis imperfecta* (brittle bone disease) (see Chapter One, **Pl. 1**). From the 1906–7 excavations of D.G. Hogarth at Asyut, came a mummy of the 12th Dynasty (EA 46631) (**Pl. 3**), and from Petrie's 1912–13 excavations at Tarkhan, come two contracted Early Dynastic bodies, one in a reed coffin (EA 52887), the other in a wooden coffin (EA 52888), both of which have precise archaeological contexts (Petrie 1914, 6, pl. XLVII); from the same site, but without context, comes a Roman child mummy (EA 52889). Another find from Petrie's work at Sedment, acquired in 1923, was a mummified head which the excavator identified as that of Meryrehashtef, owner of an important 6th Dynasty tomb at the site (EA 55725).

The Museum also acquired mummies during these years from a variety of other sources: two were presented in 1869 by the Prince of Wales (later King Edward VII) (EA 15654, 22814) and others by the Duke of Sutherland (EA 24957), Lady Amherst (EA 48971) and Captain E.L. Gruning. Another mummy (EA 22812) was obtained from the dispersal of the India Museum in London in 1880 and two were acquired at sales – EA 22939 from the collection of the French consul Raymond Sabatier (**Pl. 4**) and EA 25258 from the dealer Claude Camille Rollin.

The majority of the mummies were exhibited in a taxonomic display which was relocated to the northern upper Egyptian galleries in the early 1880s which were renewed and expanded in 1898. After this date the display of mummies and coffins underwent relatively little change until the 1990s.



**Plate 4** Mummy of a female named Taysmutengebtiu, enclosed within original cartonnage case and securely identified by inscriptions, 22nd Dynasty, c. 900 BC. British Museum, London (EA 22939)



**Plate 5** Mummy of an adult female named Katebet with original mask, pectoral ornaments and shabti figure, late 18th or early 19th Dynasty, c. 1300–1280 BC. British Museum, London (EA 6665)

### Post-1930

Changing priorities in archaeological fieldwork, together with more rigorous control of the traffic in antiquities, led to a significant reduction in the numbers of mummies being brought from Egypt in this period. Only one complete Egyptian mummy has been acquired by the British Museum since 1930 – a specimen donated by St Bartholomew’s Hospital, which may have been brought to England in the 19th century and which had been unwrapped at some unspecified date (EA 74303; Serpico 1998, 1044–6). A completely new permanent display of mummies, which opened in 1999, placed the remains in context with associated grave-goods and gave prominence to their significance as sources of bioanthropological information about past societies.

### Overview of the collection

**Table 1** is a chronological listing of 87 human bodies, comprising all the extant mummies from Egypt (both naturally and artificially preserved) which are in a complete or near-complete state. Also included are a few fragmentary bodies which have a secure provenance and date, such as the head of Meryrehashtef (EA 55725) and the remains of an 11th

Dynasty female (EA 40924–7). Although the Museum’s collection also includes numerous other fragments of mummies (heads, hands and arms, feet and legs and other parts including hair samples), most of these lack reliable data as to their date, provenance and acquisition, and have therefore been omitted from the present list.

### Sex and age

Sex is indicated where known, on the basis of anatomical criteria. Age is given only as A (adult) and S/A (sub-adult), since more precise estimates are subject to change.

### Chronological range

With one exception (EA 18212, a medieval body from Giza), the mummies span a chronological range of nearly 4000 years (mid-4th millennium BC to early 1st millennium AD), but diachronically the evidence is unevenly spread. The seven late Predynastic bodies from Gebelein (EA 32751–6, 57353) from around c. 3500 BC constitute an important group from a single context. The succeeding period of 2,500 years to the end of the New Kingdom (c. 1070 BC) is thinly represented in the collection, consisting only of two skeletal bodies of Early Dynastic date (EA 52887–8), a single



**Plate 6** Soft tissues from the mummy of a female named Irtyersenu, 26th Dynasty, c. 550 BC, including lungs and heart (top right) and a benign ovarian tumour (lower left), extracted and prepared by A.B. Granville in 1821. British Museum, London (EA 75991)

fragment of an identifiable mummy of the Old Kingdom (EA 55725), three complete mummies of the Middle Kingdom (EA 46631, 23425, 29574, two of them unwrapped and skeletonized), together with parts of a fourth (EA 40924–7), and one complete mummy of the New Kingdom (EA 6665) (Pl. 5). The majority of the collection dates between the Third Intermediate Period and the Roman era, from the 1st millennium BC to the early 2nd century AD.

The chronological profile of the British Museum collection reflects a broader picture also seen in other major museum collections, such as that of the Rijksmuseum, Leiden, all of whose 27 mummies date to the Third Intermediate to Roman periods (Raven and Taconis 2005, 53). The scarcity of well-preserved mummies from the period before the end of the New Kingdom is well attested, and several reasons for this can be postulated. Mummification by artificial processes was a mark of high status in the earlier periods and was probably available only to a relatively small proportion of the population, and the techniques used appear to have been less effective in preserving soft tissues and maintaining the physical integrity of the corpse than in later centuries. There was systematic destruction of older burials through plundering and/or reuse of tombs, while the existence of a more organized system of cemetery management during the later centuries of pharaonic culture seems to have allowed a higher proportion of later mummies to survive undisturbed to modern times.

### Geographical range

Here too the picture is unbalanced, with a preponderance of mummies from Upper Egyptian sites such as Thebes and Akhmim, and very few from the historically important regions of the Delta and northern Upper Egypt. This is due to the variation in the degree of preservation of organic remains in different parts of Egypt, and to the fluctuating accessibility of burial sites between the 18th century and the present day in addition to the changing priorities of those who collected mummies.

In the Delta environmental conditions are not generally conducive to the good preservation of organic remains, and

those mummies which have been found there are usually reduced to bones. In other areas too, such as the Faiyum, groundwater destroyed many bodies. Generally, the dry conditions in cemeteries along the Nile valley in Upper Egypt promote good preservation, and it is from these areas that the majority of well-preserved mummies come.

Most of the mummies that were brought to Europe in the 16th to 18th centuries came from the Memphite necropolis, as it was relatively easy to access from Cairo and penetration further into the interior to sites such as Thebes was still considered too dangerous by most travellers. This changed in the 19th century when the whole of Egypt and northern Sudan became more accessible, and Thebes became the focus of a flourishing mummy trade. Other cemeteries along the Nile, however, remained little exploited until the late 19th and early 20th centuries. Since 1900 anthropological studies of human remains from Egypt have tended to focus on skeletal material (often in the field, rather than in the museum), with a consequent reduction in the addition of mummies to museum collections.

### Previous research on the British Museum mummies

The earliest documented studies of the British Museum mummies were carried out in 1792 by the distinguished German anthropologist Johann Friedrich Blumenbach (1752–1840). His examination of small mummies in private collections had raised questions of authenticity; they did not contain, as expected, the bodies of children, but a bundle of resin-soaked wrappings and ibis bones respectively (Blumenbach 1794). To elucidate this problem Blumenbach was granted permission to open one of the three small mummies then in the British Museum (that from the Sloane collection). He found that it contained the humerus of a child and concluded that such ‘mummies’ (contained in coffins secured with iron nails) were ‘deceptions’ (Blumenbach 1794; more have been identified subsequently: Germer, Kischkewitz and Lüning 1994; Quirke 1997). Blumenbach was also allowed to examine two of the Museum’s four large mummies, one of which ‘had already been opened in several places’. His observations on the larger mummies relate to the state of their preservation (in both cases only the bones survived), the ethnicity of the bodies, determined from the skulls, and the absence of amulets or other objects (Blumenbach 1794).

It is not clear whether the large mummies ‘opened’ by Blumenbach survived this process. By 1809 only two large mummies and one ‘mummy of a child’ were displayed. One of the large specimens was said to be that bequeathed by William Lethieullier, but the description in the 1809 *Synopsis*, which mentions a gilded face and painted ornaments, does not match the 1724 illustration of the mummy by Vertue, suggesting that there had been some confusion of identities. The William Lethieullier mummy cannot be identified in the collection today and may have been reduced to unrecognizable fragments by Blumenbach. The 1840 *Synopsis* mentions ‘Mummies, unrolled and wrapped up again; one in a very incomplete state’ (1840, 268).

The period 1820–40 was characterized by many unwrappings of mummies in England. The momentum had been begun by the explorer Giovanni Belzoni (1778–1823),

and the practice was taken up mainly by men of medical background, notably Thomas Joseph Pettigrew (1791–1865) (the chief exponent of mummy ‘unrollings’) and Augustus Bozzi Granville (1783–1872). Their investigations were directed towards increased understanding of mummification procedures, retrieving evidence for the ethnicity of the ancient Egyptians and the recovery of amulets and other objects placed within the wrappings. Although some crude scientific tests were applied, most of the mummies that were opened in this manner suffered severe and irreversible damage, and in consequence the British Museum refused Pettigrew permission ‘to examine one or two of the specimens’ in its collection (Pettigrew 1834, xix). A meticulously mounted and labelled set of samples from a female mummy which Granville had carefully dissected was sold to the Museum in 1853, but the authorities considered them unsuitable for display, much to Granville’s displeasure (Granville 1874, vol. II, 210–11) (Pl. 6). Although the mummy collection was considerably expanded in the late 19th and early 20th centuries, none of the bodies were unwrapped (Budge 1920, vol. II, 395) and there is no record of any research being carried out on them until the 1960s.

An extensive radiological survey of the mummies was carried out in 1963–5 by P.H.K. Gray using portable X-ray equipment. This study of 78 mummies yielded the first significant assessments of sex, age, state of health, pathological conditions and mummification techniques, and revealed the presence of objects beneath the wrappings and within the body cavities. The results of this study were published selectively (Dawson and Gray 1968). The Trustees of the British Museum still refused for any of the mummies to be unwrapped, but permission was granted to make a small incision in mummy EA 6659 in order to extract an enigmatic object that had been revealed by X-ray; this proved to be a crude clay figurine (Dawson and Gray 1968, pls XXIc, XXXc).

Since 1991 more than 30 mummies in the collection have undergone CT scanning, carried out using a variety of scanning equipment in numerous hospitals in London, Manchester and Brisbane, while six were scanned using portable equipment when on loan to a museum in California in 2005. The studies have yielded both CT data in DICOM medical imaging format and 3D reconstructions, which have provided substantial new information about sex, age, state of health, pathology and mummification procedures, but the results have been published only selectively so far (Taylor 1994; Filer 1997; Taylor 2004). These exercises have also raised several issues concerning the long-term storage of CT data, image rights and intellectual property, which have informed subsequent discussions on the development of watertight protocols for future studies.

From the 1980s to the present day, bioanthropological and other scientific studies of Egyptian mummies have proliferated worldwide. However, comparatively little invasive study has been carried out on the British Museum mummies. The investigations which have been undertaken have been limited to the analysis of small samples from unwrapped or fragmentary bodies, chiefly in order to preserve the integrity of the wrapped mummies which constitute the major part of the collection.

Investigations have focused on three main areas: the extraction of ancient DNA, palaeopathological studies and analyses of embalming materials. In 1989 Svante Pääbo reported the successful extraction of a short sequence of mitochondrial DNA from the Predynastic natural mummy EA 32753 (Pääbo 1989), but subsequent studies on bone and ligament from mummies EA 23425, 29574, 32752, 32754, 32755, 32756, 40924–5, 57353, 52887 and 52888, carried out at the University of Munich, yielded negative results and no further investigations of this kind have been conducted on British Museum specimens.

A tissue sample from EA 32753 revealed the presence of an antigen produced by the body to combat schistosomiasis (Miller *et al.* 1993, 58–9, pl. 6). Two other natural mummies from Gebelein and the unwrapped mummies of children of the Roman period have been examined purely by visual inspection for evidence of dermatological conditions, a study which showed signs of eczema on skin and stress lines on fingernails; the same researchers identified egg cases of head louse in the hair of mummy EA 32752, in addition to reddish colouring of hair and nails which has been tentatively interpreted as ‘consistent with the use of henna’ (Leslie and Levell 2006). Study of soft tissues and bone from the female mummy dissected by Augustus Bozzi Granville in 1821 (EA 75991) has demonstrated that the subject suffered from tuberculosis (Donoghue *et al.* 2009); further analytical investigations on this mummy have been conducted in recent years, but as of yet are unpublished.

Several studies of the chemical composition of embalming agents from mummies have been carried out, using samples from the British Museum as the basis of Gas Chromatography/Mass Spectrometry (GC/MS) and other techniques. These studies have used small samples mainly from the exposed surfaces of incomplete bodies, from the wrappings of mummies or in some cases from the deposits exuded from mummies, retrieved from the surfaces of coffins (Serpico and White 1998; Buckley and Evershed 2001).

### Future research: potential and limitations

Although the possibilities of conducting research based on tissue sampling from wrapped mummies remain limited, non-invasive imaging has and continues to furnish much new data. While these techniques greatly expand the amount of information which the British Museum mummies can yield, special care is needed in interpreting the findings. It is recognized that the value and usefulness of scientific studies depends heavily on obtaining samples from mummies which have a secure provenance and date (Buckley and Evershed 2001, 837) and, if possible, are the remains of identifiable persons. The extent and reliability of such data should be rigorously assessed as they are often less secure than they may appear to be at first sight.

### Provenance

Comparatively few of the British Museum mummies have a contemporary record of their discovery or exact provenance. This is available for most of those from controlled excavations such as the bodies from Tarkhan, Asyut or Hawara, but the majority of mummies acquired before the

**Table 1 Egyptian mummies in the collection of the Department of Ancient Egypt and Sudan at the British Museum, arranged in chronological sequence. 'Acquired' records the date of formal registration (which may in some cases be one or more years later than the arrival of a mummy at the Museum). 'Date' is based on recent studies of embalming techniques, coffins and associated objects, and supersedes the datings given in Dawson and Gray 1968. Under 'Wrappings etc.', 'cartonnage' denotes a complete mummy-case, from which the body has not been removed, rather than separate trappings, such as mask, collar, footcase etc. The list omits fragments of mummies without secure date and provenance (A=Adult, S/A=Sub-adult)**

BM No.	Date	Provenance	Acquired	Sex	Age	Name	Description	Wrappings etc
32751	Predynastic	Gebelein	1900	M	A		Flexed	None
32752	Predynastic	Gebelein	1900	F	A		Flexed	None
32753	Predynastic	Gebelein	1900	?	A		Flexed	None
32754	Predynastic	Gebelein	1900	M	A		Flexed	Textile fragments
32755	Predynastic	Gebelein	1900	?	A		Flexed	Textile fragments
32756	Predynastic	Gebelein	1900	?	A		Flexed	Textile fragments
57353	Predynastic	Gebelein	1923	M	A		Flexed	Textile fragments
52887	1st Dyn.	Tarkhan	1913	?	A		Flexed	None
52888	1st Dyn.	Tarkhan	1913	?	A		Flexed	Textile fragments
55725	6th Dyn.	Sedment	1923	M	A	Meryrehashtef	Skull	None
40924-7	11th Dyn.	Deir el-Bahri	1904	F	A		Skull, r. arm, feet	None
46631	12th Dyn.	Asyut	1907	M	A	Ankhef	Extended	Wrapped
23425	12th Dyn.	Asyut	1895	M	A	Heny	Extended	None
29574	12th Dyn.	Asyut	1895	M	A	Khety	Extended	None
6665	19th Dyn.	Thebes	1835	F	A	Katebet	Extended	Wrapped
48971	21st Dyn.		1909	F	A		Extended	Wrapped
22939	22nd Dyn.	Thebes	1891	F	A	Tayesmutengebtiu	Extended	Wrapped, cartonnage
6659	22nd Dyn.	Thebes	1823?	M	A	Hor	Extended	Wrapped
6660	22nd Dyn.	Thebes	1823?	M	A	Denytenamun	Extended	Wrapped
6662	22nd Dyn.	Thebes	1834	M	A	Djedkhonsiufankh	Extended	Wrapped, cartonnage
30720	22nd Dyn.	Thebes	1899	M	A	Nesperennub	Extended	Wrapped, cartonnage
25258	22nd Dyn.		1894	F	A		Extended	Wrapped, cartonnage
20744	22nd Dyn.		1888	F	S/A	Tjayasetimu	Extended	Wrapped, cartonnage
6697	21st-22nd D.		1834	F	A		Extended	Wrapped
22812	21st-22nd D.		1880	M	A		Extended	Wrapped
41603	22nd Dyn.	Sp. Artemidos	1905	M?	S/A		Extended	None
29577	22nd Dyn.		1897	M	A	Djedameniufankh	Extended	Wrapped, cartonnage
74303	21st-25th D.		1990	F	A		Extended	Unwrapped
6681	25th Dyn.	Thebes	pre-1840	M	A	Peftjaukhons	Extended	Wrapped, cartonnage
6682	25th Dyn.	Thebes	1839	M	A	Padiamenet	Extended	Wrapped, cartonnage
6692	25th Dyn.	Thebes	1835	F	A	Takhebkhenem	Extended	Wrapped
6676	25th Dyn.		1834	M	A	Penamunnebnesttawy	Extended	Wrapped
15654	25th Dyn.	Thebes	1869	F	A	Bakrenes	Extended	Wrapped
32052	25th Dyn.	[Akhmim?]	1904	F	A	Tetjenef	Extended	Wrapped
6666	26th Dyn.		1823	F	A		Extended	Wrapped
24957	26th Dyn.		1893	F	A		Extended	Unwrapped
6669	26th Dyn.	Thebes	1839	M	A	Ameniryirt	Extended	Wrapped
6673	26th Dyn.		1839	F	A	Ankhesnefer	Extended	Wrapped
22814	26th Dyn.	Thebes	1869	M	A		Extended	Wrapped
75991	26th Dyn.	Thebes	1853	F	A	Irtyersenu	Fragments	Unwrapped
20745	26th Dyn.	Akhmim	1888	M	A	Irthorru	Extended	Wrapped
20650	26th Dyn.	Akhmim	1887	M	A	Djedher	Extended	Wrapped
6696	26th Dyn.		1766	M	A	Itineb	Extended	Wrapped
29578	Late Period?		1898	F?	A		Extended	Wrapped
6694	LP/Ptolemaic	Saqqara?	1756	?	A		Extended	Partially unwrapped
6716	Ptolemaic?			F	A		Extended	Wrapped
6679	Ptolemaic	Thebes	1835	M	A	Hornedjitief	Extended	Wrapped
6680	Ptolemaic		1835	M	A	Horemheb	Extended	Wrapped
6711	Ptolemaic	Thebes	1835	M	A	Ankh-hap	Extended	Wrapped
29581	Ptolemaic	Akhmim	1898	M	A	Nesmin	Extended	Wrapped
29776	Ptolemaic	Akhmim	1898	M	A	Djedher	Extended	Wrapped
29777	Ptolemaic	Akhmim	1898	M	A	Padikhonsiin	Extended	Wrapped
29778	Ptolemaic		1898	M	A		Extended	Wrapped
6957	Ptolemaic		1836	?	A		Extended	Partially unwrapped
6699	Ptolemaic		1839	?	S/A		Extended	Wrapped
6718	Ptolemaic		?	F	A		Extended	Wrapped
6704	Roman		1835	M	A		Extended	Wrapped
29782	Roman	Akhmim	1897	M	A		Extended	Wrapped



BM No.	Date	Provenance	Acquired	Sex	Age	Name	Description	Wrappings etc
6717	Roman?		?	?	S/A		Extended	Wrapped
6707	Roman	Thebes	1823	F	S/A	Cleopatra	Extended	Wrapped
13595	Roman	Hawara	1888	M	S/A		Extended	Wrapped
21810	Roman	Hawara	1888	M	A	Artemidorus	Extended	Wrapped, cartonnage
21809	Roman	Hawara	1888	?	S/A		Extended	Wrapped
22108	Roman	Hawara	1889	M	S/A		Extended	Wrapped
24800	Roman	Faiyum?	1893	M	A		Extended	Wrapped
29783 (1)	Roman		1898	M	A		Extended	Wrapped
29783 (2)	Roman		1898	?	S/A		Extended	Wrapped
29783 (3)	Roman		1898	?	S/A		Extended	Wrapped
29783 (4)	Roman		1898	?	S/A		Extended	Wrapped
6709	Roman		pre-1840	M	S/A		Extended	Wrapped
6712	Roman		pre-1840	M	A		Extended	Wrapped
6713	Roman	Thebes	1823	M	A		Extended	Wrapped
6714	Roman		1839	M	A		Extended	Wrapped
6715	Roman		1835	M	S/A		Extended	Wrapped
6723	Roman		1823	M	S/A		Extended	Wrapped
52889	Roman	Tarkhan	1913	?	S/A		Extended	Wrapped
29588	Roman	Akhmim	1897	?	S/A		Extended	Wrapped, cartonnage
54052	Roman		1915	?	S/A		Extended	Wrapped
54053	Roman		1915	M	S/A		Extended	Wrapped
30362	Roman		1898	?	S/A		Extended	Unwrapped
30363	Roman		1898	F	S/A		Extended	Unwrapped
30364	Roman		1898	M	S/A		Extended	Unwrapped
54055 (1)	Roman		1915	?	S/A		Extended	Wrapped
54055 (2)	Roman		1915	?	S/A		Extended	Wrapped
54051	Roman?		1915	?	S/A		Extended	Wrapped
6724	Roman?		1823	?	S/A?		Extended	Wrapped
18212	Medieval	Giza	1838	?	A		Extended	None

NB The mummy of Kemsit, one of the wives of Mentuhotep II, was accessioned in 1905 (as EA 41853 = 1905-10-14, 237), but it cannot now be located. The description in the original acquisition register reads: 'Upper portion (legs missing) of the mummy of a woman, with head turned over to left. Found in the tomb of the negress priestess Kemsit, and probably her body (with cloth). 2 ft 4 ins L.' A note adds that it was 'packed in wooden case & put in Carthaginian Basement, May 1 '06'. Presumably it had already disappeared by the 1960s since it was not included in Dawson and Gray's X-ray survey of the Egyptian mummy collection then.

1880s lack such information. The keeping of such records was not generally practised at that time, and thus no provenances are attached to the descriptions of the mummies in the 1840 *Synopsis*. However, by the 1890s the Museum's guidebooks give this information in most cases (as in British Museum 1898), the 'missing' data having been apparently supplied by museum staff either from paper records or on the basis of stylistic assessments. These published provenances have been repeated in later publications, but should where possible be tested by archival research since they are not always accurate. For example, mummy EA 32052 was registered in 1904 together with a group of objects from John Garstang's excavations at Beni Hasan, and it has been assumed to come from that site and published as such (Dawson and Gray 1968, 17). However, recent archival research has shown that the mummy was not originally associated with the objects from Beni Hasan, and stylistic evidence from the coffins points instead to Akhmim as a more likely provenance.

In fact many of the attributions to sites are based mainly on inscriptional evidence from the coffins in which the mummies were obtained. These often bear official titles identifying the owners as members of the priesthoods of the gods Amun at Thebes and Min at Akhmim, and in some cases genealogical information enables an individual to be

linked to a documented family which is known to have resided in one of those centres.

### Dating

Until recently, scientific techniques such as radiocarbon dating have not made a significant contribution to the study of Egyptian mummies, owing largely to the destructive nature of the procedure, the potential for the contamination of samples and the known practice of ancient embalmers and undertakers of reusing older organic materials for wrappings and coffins. Moreover, the margin of error inherent in radiocarbon dates has often proved unacceptably broad. The dating of the British Museum mummies is based on archaeological context, where known. If this data is unavailable (which is the case for most of the mummies), techniques of mummification and inscriptional or stylistic evidence from coffins have been used as guides, but uncertainty about the chronology of technical and stylistic trends can limit the reliability of these deductions.

### Identities

Although mummies of some historical personages (particularly the New Kingdom pharaohs and their families) have survived, these are the exceptions. The majority of Egyptian mummies are either unidentified or are those of



**Plate 7** Pectoral ornament from the mummy of a woman named Katebet. Although an original element of the mummy's trappings, this object was made for the burial of a man, as indicated by the costume of the two figures flanking the scarab beetle. British Museum, London (EA 6665)

persons not otherwise attested from written sources. It is rare for identification to be found on the mummy itself; the name may be inscribed on bandage epigraphs, mummy labels or on exterior trappings such as cartonnage coverings, but often these objects omit the name or are indecipherable. Such trappings can in any case be misleading; they may have been placed there by antiquities dealers or, even if original to the mummy, may bear the name or image of another person. Mummy EA 6665 has been identified as female from the mask and from X-rays of the skeleton, but a pectoral on the wrappings, which from the conspicuous fading of the colour of the surrounding textiles appears likely to be in its original context, depicts the deceased as a man (Pl. 7). The identification of the body as that of a woman named Katebet is based on the inscription on the lid of the associated coffin (itself a hybrid piece, having both male and female iconographic elements).

### Association between mummies and coffins

It is clear from the above that accepted opinion as to the provenance, date and identity of mummies frequently relies heavily on the evidence offered by their coffins. One must therefore consider carefully the reliability of these associations. In many periods, Egyptian coffins were standardized in size, shape and proportion, not made to fit a particular individual. Mummies have often been found to be smaller than the coffins they occupy, and transposition of body and coffin therefore could, and did, occur. This happened in ancient times (through reuse and error), in the context of 18th and 19th century dealing and also, inadvertently, in museums when mummies were removed from their coffins for separate storage or display.

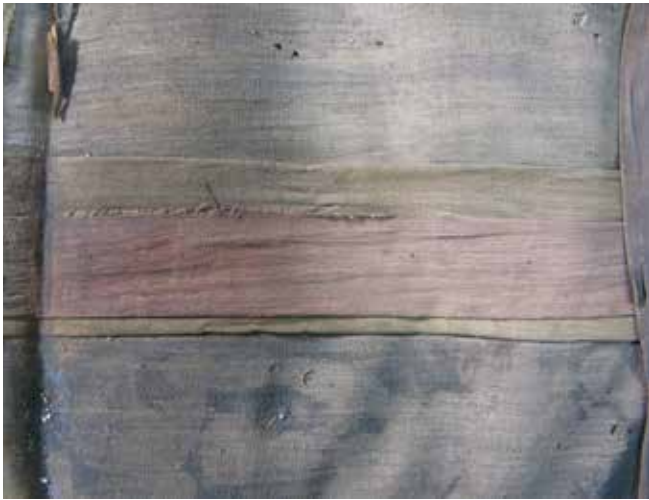
Transpositions may be detected if there is an obvious stylistic discrepancy between the trappings of the mummy and the coffin in which it lies, such as Ptolemaic cartonnage trappings with a coffin of a style several hundred years older,



**Plate 8** Unidentified wrapped female mummy, 26th Dynasty, c. 650 BC, acquired in the coffin of a male named Horaawesheb dating to the 22nd Dynasty, c. 900 BC. British Museum, London (EA 6666)

or a female mummy in a 22nd Dynasty cartonnage case, placed within a 26th Dynasty priest's coffin (Nielsen 1993). Much more difficult to detect are cases where the mummy has no exterior trappings and the arrangement of the wrappings is not distinctive. Among the collection of the British Museum, some such cases of transposition have been revealed through the determination of the sex of the mummies – both by unwrapping (female EA 24957, acquired in the coffin of man), X-ray and CT scanning (female body EA 6666 in a male coffin and male bodies EA 22812 and EA 22814 in coffins inscribed for women) (Pl. 8).

While these transpositions could have occurred in ancient times, it is much more likely that they reflect the deceptions which were regularly practised by antiquities dealers. Even in the early 18th century, the purveyors of 'curiosities' to European collectors broke up mummies that were found in high quality coffins so as to obtain the amulets and objects within their wrappings, substituting inferior mummies in their place (Blumenbach 1794, 133). By the early 19th century, the situation was considerably worse. Richard Robert Madden (1798–1886) recorded: 'In the sale of mummies [at Qurna], I discovered such frauds, that I have no hesitation in saying, in all the cabinets of Europe, there are not probably twenty mummies in the same coffins in which they were originally deposited.' (Madden 1829, II, 78ff). In the tomb-dwelling of one of the dealers, Madden saw 'a manufacture of mummies. Three beautiful mummy cases were laid open, an ordinary mummy was placed in the last, the original one having been previously pillaged; and, what convinced me of the fraud was several new wooden



**Plate 9 Detail of the linen wrappings of the mummy of Katebet, showing remains of a reddish colouring. Descriptions of this mummy from the mid-19th century mention 'maroon' colouring on the bandages, which has now deteriorated through long-term exposure to light. British Museum, London (EA 6665)**

pegs lying on the cover of the large case, undoubtedly intended as substitutes to the old ones, which had been broken in bursting open the external case.' Qurna, on the Theban west bank, was the main centre for the mummy trade in the 19th century, and a large number of the mummies now in museums came from there before the advent of scientific archaeology. Transposition was also practised by those selling their collections in Europe, thus several coffins acquired by the British Museum in the 1830s had 'intrusive' mummies inside them (above, p. 105). Indeed, absolute certainty about a mummy's identity is only possible for specimens that are still sealed within inscribed cartonnage cases which enveloped the body completely, and which could not be removed without visible damage.

### Previous conservation treatments and the effects of display and storage

Scientific studies should also take into account the environments and treatments to which the mummies have been exposed since their acquisition. The majority of the British Museum mummies have been on long-term display in the public galleries (30+ in the 1840s, 42 in 1904, 24 today), exhibited in the 19th and 20th centuries in glazed cases with wood or metal frames and now currently in glass cases without microclimates or internal gases. They have been exposed to both natural and artificial light, which has caused the dyed and painted surfaces of linen wrappings to fade. The original colours are mentioned in early descriptions and may be still visible on parts of the wrappings that have not been exposed (**Pl. 9**). Fluctuating environmental conditions (temperature and humidity) have sometimes led to the growth of mould and salt efflorescence, but these instances have been successfully controlled subsequently, as has insect activity, except in the single case of a mummy which was attacked by insects and authorized for disposal in 1843 (above, p. 105). Current practice requires detailed records to be kept of all conservation treatments, but unfortunately there is little documentation on the methods which were applied to the mummies in the 19th and

early 20th centuries. Recent attempts to obtain radiocarbon dates from some of the Gebelein natural mummies have been compromised since the bodies were found to have been treated with pesticides at some unspecified date; hence the researcher must at all times be prepared to encounter difficulties arising from such undocumented treatments.

### Conclusion

Experience has shown that Egyptian mummies hold the clues which may provide answers to many important questions about the life experiences and cultural practices of past societies in the Nile valley over an unparalleled time-span of more than 4,000 years. The potential which they hold as sources of scientific data is still largely untapped, but they are not an inexhaustible resource and hence any strategy for their future study must be predicated on the need to maintain their physical integrity. The trajectory of study in the short term appears likely to focus on the capture of full C/T data sets of all mummies in the collection and the permanent storage of this information in readily accessible form (Taylor and Antoine 2014). Such non-invasive imaging can be expected to yield significant new data on the lifestyles of the ancient Egyptians, the incidence of disease and mummification. Much remains to be done, however, towards the study of the chemical composition of organic and inorganic substances which were used in the embalming process, and here the chief obstacle to progress at present is reluctance to subject intact mummies to destructive sampling. While research into ancient DNA from mummies continues to provoke controversy (Hawass *et al.* 2010), recent refinements in techniques for utilizing radiocarbon dating from Egyptian remains (Shortland and Bronk Ramsey 2013) may foreshadow renewed interest in the application of this methodology to the study of mummies.

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