A Red Shroud Mummy from El Hibeh, now at the Fitzwilliam Museum

Fig. 1: The Fitzwilliam red shroud mummy (E.63.1903)

PROVENANCE AND BACKGROUND

In the 1st to the 2nd century AD, several types of burial wrappings were favoured by Romano-Egyptians. One such was the red shroud portrait mummy. About thirty red shrouded mummies and fragments of mummies survive from this period. Significantly among this group, the Fitzwilliam Museum mummy (E. 63.1903) has a firm burial provenance. He was discovered, along with another red shroud mummy, that of a woman, by the British papyrologists Grenfell and Hunt. The mummies are shown together in a post-excavation photograph dating from 1902/3. The second mummy is now in the Egyptian Museum in Cairo (CG 33217). At least ten remaining red shroud mummies and fragments appear to be very closely related stylistically, iconographically and technically. Where these mummies were made is unclear; two have been found in Hawara and a further two about 30 miles away in El Hibeh. Mummies are known to have been transported significant distances for burial (Corcoran 1995).

Table 1: Closely comparable mummies

Current location	Shroud	Gender	Burial provenance
Brooklyn Museum	Registers	Male	Hawara
Basel	Registers	Male	Unknown
Cairo (33217)	Body	Female	El Hibeh
Cairo (33218)	Body	Female	El Hibeh
Copenhagen	Registers	Male	Hawara
Fitzwilliam	Registers	Male	Unknown
Getty (Herakleides)	Registers	Male	Unknown
Getty (Isidora)	Body	Female	Unknown
Hildesheim	Body	Female	Unknown
Spurlock	Registers	Unknown (child)	Unknown

Within the group of closely related red shroud mummies, a different approach to the decoration of men and women's shrouds can be seen. Protective religious motifs displayed in registers are favoured on male shrouds whereas women are depicted full length in Romanised dress. Many of the religious motifs are repeated on different mummies. All mummies have a separately painted mummy portrait bound into the wrappings, which is then framed by lozenges of gold leaf. Many of the shrouds appear to have undergone the same degradation processes; Cairo museum mummies 33217 and 33218, the Basel mummy, the Brooklyn mummy, Herakleides and a fragment listed by Parlasca as number 681 (Parlasca 2003), all display a white bloom visually akin to that found on the Fitzwilliam mummy.

Fig. 2: Herakleides, Getty Villa (91.AP.6)

Fig. 3: Mummy of a man, Basel Antikenmuseum

Fig. 4: Demetrios, Brooklyn Museum, 11600 a and b

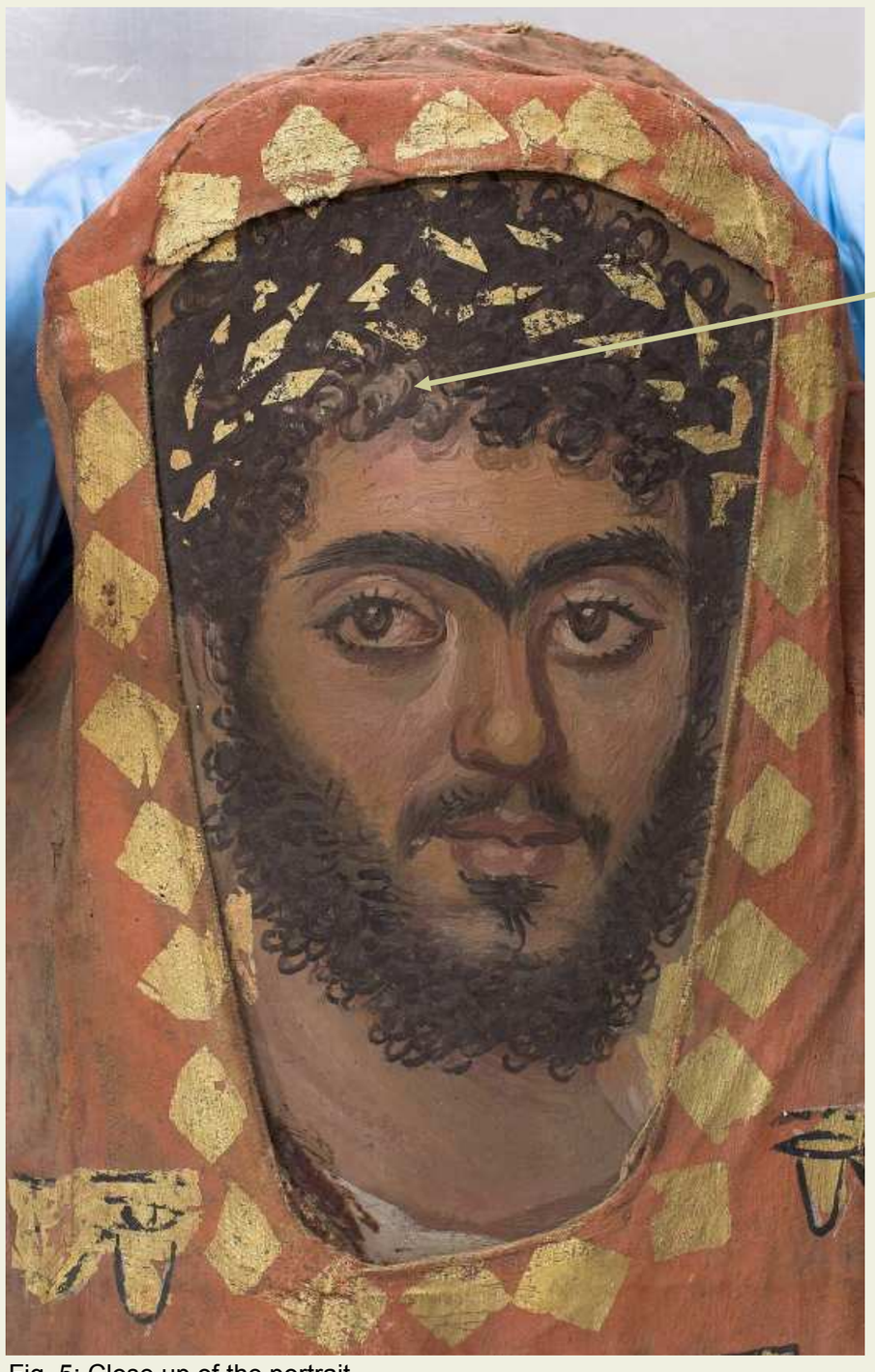

Fig. 5: Close up of the portrait

TECHNICAL EXAMINATION OF THE PORTRAIT

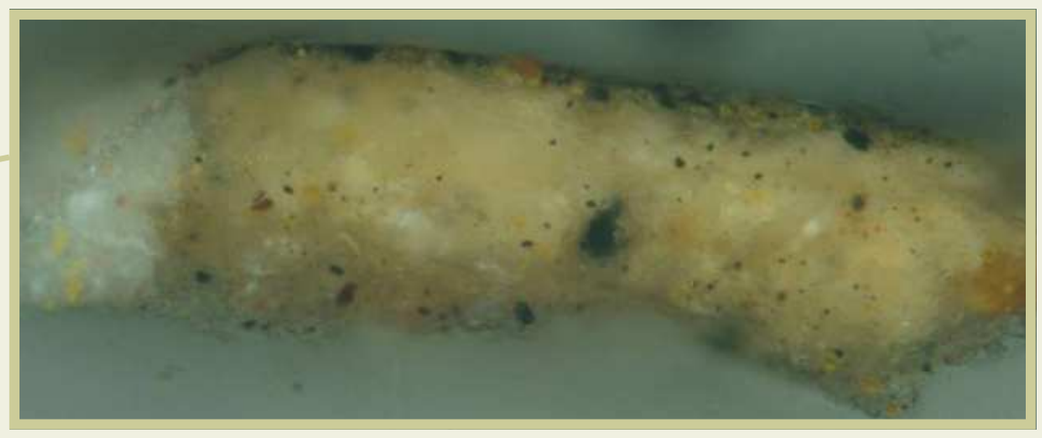

Fig. 6: Cross section taken from loss in the hair of the portrait

There are around one thousand surviving painted portraits on wood and canvas from the Roman period in Egypt (Parlasca 1966-2003). These are mainly in the form of mummy portraits, the vast majority of which have been separated from their mummies in the course of 19th and early 20th century collecting. This portrait was created separately from the shroud, almost certainly by a different artist. The gilding of the wreath and on the background of the portrait was added at the time the shroud was made, once the painting had been bound into the mummy. This implies that the portrait, while made for use in a mummy, had a separate function or existence prior to being incorporated into the wrappings, perhaps in a funerary context. The excellent condition of the painting meant that it was only possible to take one cross section from an area of existing loss. Scanning Electron Microscopy/Energy Dispersive X-ray (SEM-EDX) analysis was undertaken by Spike Bucklow of the Hamilton Kerr Institute. Fourier Transform Infrared Spectroscopy (FTIR) and Gas Chromatography-Mass Spectrometry (GC-MS) were undertaken by Catherine Higgitt and David Peggie of the National Gallery, London. The portrait was found to have no pigmented ground. Earth and silicate pigments are present in the paint sample along with charcoal, lead white and calcium sulphate. The medium is beeswax and there are lead soaps present. Whether the wax was deliberately saponified before use, the technique known as Punic wax, is not presently detectable given the occurrence of lead soaps. Both brush and spatula marks are visible on the portrait and the wax was probably applied warm.

TECHNICAL EXAMINATION OF THE SHROUD: METHOD OF MANUFACTURE

The linen outer casing of the shroud consists of one plain-weave cloth. Judging by the layers of thick wax-bound paint, which has dripped down the edges and the less decorated reverse, the mummy was painted lying on its back. Small fragments of a reed brush are still visible on the surface. Red lead, with some silicates, charcoal and calcite, were used to colour the shroud. Analysis of lead isotope ratios and of trace metals undertaken by Marc Walton of the Getty indicates close connections between four mummies, the Fitzwilliam mummy, two at the Getty and the Brooklyn mummy. Red lead used in the making of these four shrouds was sourced from the Rio Tinto area of Spain where it was a manufactured by-product of the Roman silver mining industry. The discovery of the same trace metals suggests a common source for the material.

Fig. 7: Cross section of the purple layer

Fig. 8: Shroud decoration, normal light

Fig. 9: As figure 8, ultraviolet light

Fig. 10: The reverse of the mummy is considerably less decorated

Once the red had been applied, the designs were roughly marked out in a grey paint made chiefly of lead white and earth pigments. The subsequent painting is executed loosely and consists of purple and green with black outlining. The purple colour is achieved through the turbid medium effect over the red and is made up chiefly of charcoal, lead white and iron oxide red. The green pigment is unusual: it is wax bound and copper-containing. Gold leaf has been applied to many of the designs. Although no visible mordant underlies the gilding, pine resin was found in a sample. This may be the mordant for the gilding, a component of the paint film, or resins applied to the body beneath. In ultraviolet light, the mummy exhibits considerable fluorescence.

THE WAXY GREEN

The microscopic appearance of the green was a mixture of pale greenish waxy fragments, with some deeper green particles. Polarised light microscopy of the darker green particles revealed an isotropic material with a good green colour. GC-MS analysis undertaken by Catherine Higgitt and David Peggie at the National Gallery, London, identified the binding medium of the copper-based pigment as beeswax with even carbon fatty acid methyl esters. FTIR indicated the green pigment to consist of beeswax and copper fatty acid soaps and there were no lead soaps found in the uppermost green layer. There was also no indication of the presence of any copper resin soaps. SEM-EDX analysis indicated that the copper green was used in conjunction with yellow ochre, charcoal and lead white. The copper was also associated with tin. This is the fifth and latest example of a copper-wax pigment found on an Egyptian object. Others have been identified by Vincent Daniels on objects ranging from the twentieth to the twenty-sixth dynasties (Daniels 2007). Other copper compounds recently found on Egyptian objects from the Ptolemaic period include copper proteinate and copper carbohydrate (Scott 2002; Scott et al. 2003). The exact nature of the copper compound is not yet known. The pigment may have been made through the heating of a copper metal or a copper containing compound in wax until a green pigment was produced through reaction with fatty acids in beeswax. The presence of tin might indicate that a bronze vessel was used for making the copper/beeswax compound or that bronze was the source of a copper corrosion material for use as a pigment. Alternatively, an Egyptian green frit made from scrap bronze might have been incorporated into the wax binder. Janis (1999) has found a copper wollastonite green frit on a 2nd century BC pectoral. The green pigment has undergone some degradation and in places appears brown.

Fig. 11: The deep green particles in dispersion

Fig. 12: Cross section showing a part of the waxy green layer without the deep green particles.

DATING

The mummy shroud has either been dated to between 100-150 AD (present display label) or 161-186 AD (Parlasca 1977; Doxiadis 1995). The former date has been given through stylistic comparison to other similar radiocarbon dated mummies and the latter through stylistic comparison of the portrait. The two Getty mummies, Isidora and Herakleides have been dated to 71 AD (+/- 27 years) by radiocarbon (C-14) dating. Recent C-14 dating of wax fragments from the shroud of the Fitzwilliam mummy has indicated a date of 180 AD (+/- 41 years). Testing of all samples has been undertaken by the NSF Arizona AMS Facility with the support of the Getty. The implication is that the production of red shrouds stylistically and technically similar enough to one another to be considered the products of the same workshop took place over perhaps some hundred years.

EXAMINATION OF THE WRAPPINGS AND BODY

The mummy was taken to Addenbrookes hospital for a CT (Computerised Tomography) scan. This has enabled a detailed examination of the mummy's wrappings for the first time and our understanding of the physical remains of the individual has been updated through the work of forensic archaeologist Corinne Duhig.

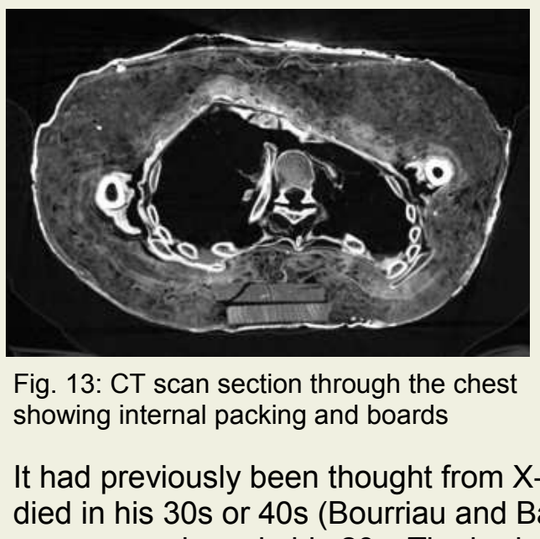

Fig. 13: CT scan section through the chest showing internal packing and boards

Fig. 14: The mummy being scanned

It had previously been thought from X-ray examination of the body that the individual died in his 30s or 40s (Bourriau and Bashford 1980). CT scans indicate that he was younger-perhaps in his 20s. The body was in an advanced state of decomposition before mummification and has been damaged during the wrapping. The CT scan also showed that the mummy had been laid on two wooden boards to provide rigidity and that the linen wrapping has been packed out using scrunched up cloth. The Brooklyn mummy, Demetrios, has also been revealed to have been laid on a board as have Herakleides and the Basel mummy.

CONSERVATION

Many parts of the linen shroud were delaminating from the linen wrappings beneath. Klucel G in IMS was applied to carefully torn pieces of Japanese tissue paper. The pieces were then individually fed into the correct locations using a metal spatula or piece of stiff melinex and held with a finger until dry. The areas of flaking paint on the mummy shroud were consolidated using Lascaux Medium for Consolidation 4176. Once the fragile support and surface had been consolidated, dry surface cleaning of the mummy shroud was undertaken using a smoke sponge. The particularly dirty areas of the foot and head were the focus of much of the cleaning. The portrait was lightly cleaned using saliva on a cotton swab.

Fig. 15: The foot of the mummy

Fig. 16: The head of the mummy

Many thanks to Sally Ann Ashton, Spike Bucklow, Julie Dawson, Nichole Doub, Corinne Duhig, Catherine Higgitt, Ian McClure, David Peggie, Christina Rozeik, Lucy Skinner, Marie Svoboda, Halina Szutowicz, Christopher Titmus and Marc Walton. Figures 1, 5, 8, 9, 10, 15 and 16 © Christopher Titmus, Hamilton Kerr Institute; Figure 2 © The J. Paul Getty Trust; Figure 3 courtesy of Basel Antikenmuseum, Figure 4 courtesy of Brooklyn Museum; Figures 6, 7, 11 and 12, © Lucy Wrapson, Hamilton Kerr Institute, Figure 13 courtesy of Halina Szutowicz, Addenbrooke's Hospital; Figure 14 courtesy of Julie Dawson, Fitzwilliam Museum. Lucy Wrapson, Hamilton Kerr Institute/Department of Antiquities, Mill Lane, Whittlesford, University of Cambridge, CB22 4NE, lucywrapson@yahoo.co.uk.