

## **Bandages, Bitumen, Bodies and Business - Egyptian mummies as raw materials**

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A large part of our fascination with Ancient Egypt is that so many of its inhabitants, human and animal, have survived through mummification as recognisable remains. Ashes are ashes, and bones, however much associated with mortality, do not look like living people. Mummies, though, however sere and shrivelled, are still recognisable for what they were. We can actually see Sety I and Ramses II in the flesh.

Our ability to physically connect, not just with the architecture and artefacts, but with the actual inhabitants of an ancient civilisation, is not unique to Egypt, but is particularly associated with it. Often the focus of enquiry is on the mummies themselves, and what they can tell us about their lives and environment, but equally interesting, it can be argued, is how succeeding cultures have reacted to, and dealt with, these remains.

### **Mummy is become merchandise...**

In the seventeenth century, Sir Thomas Browne lamented in his *Hydriotaphia* that

The Ægyptian Mummies, which Cambyses or time hath spared, avarice now consumeth. Mummy is become merchandise, Mizraim cures wounds, and Pharaoh is sold for balsams.<sup>1</sup>

Probably the best-known use of Egyptian mummies is as medicine. It is difficult to say quite how long this goes back, because of the extensive confusion surrounding the practice. Pliny the Elder, Diodorus Siculus and Strabo all referred to products used for mummification, including turpentine and asphalt. (Bitumen, which is virtually synonymous with asphalt, was probably not used in mummification until after 500 BC, during the Ptolemaic and Roman periods, but the blackened appearance of the resin used to coat mummies in earlier periods made it easy to assume that it had been.) There are various naturally occurring forms of asphalt, including Dead Sea bitumen, or *bitumen Iudaicum*,

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<sup>1</sup> Sir Thomas Browne, *Religio medici; Hydriotaphia; and, The garden of Cyrus*, ed., R. H. A. Robbins (Oxford: Clarendon Press, 1972), 131.

which can be found floating in lumps on the surface of that sea, and which was mentioned by Pliny the Elder. Asphalt, bitumen, and the more liquid pissasphalt were used as medicine, and probably had been for centuries. They were known by the general term of *mumia*, from the Arabic *mūmiyah*, and the *Materia Medica* of Dioscorides Pedanius, written around AD 40-90, which had such authority that it remained one of the leading texts on pharmacology for nearly 1,600 years, referred to the medical use of *mumia*. What caused problems was that these naturally occurring minerals became confused with the substances found on or in the embalmed bodies of the Ancient Egyptians.

In the twelfth century, when he translated the works of the Baghdad physician Rhazes (d. 923), Gerard of Cremona defined *mumia* as a substance similar to pitch produced by embalmed bodies, and in the thirteenth century the Muslim pharmacologist and botanist Ibn al-Baytar (d. 1248) distinguished between the pissasphalt of Apollonia (in modern Albania), Dead Sea bitumen, and “the *mumia* of the tombs, which is found in great quantities in Egypt”.<sup>2</sup> From assuming that the substances used to embalm Ancient Egyptian bodies had medical value, it was a short step to assuming that the bodies themselves did.

Large quantities of mummies, or fragments of them, were traded to Europe, particularly between the fifteenth and eighteenth centuries. The trade seems to have been frowned on by the Turkish authorities, although the enthusiasm with which this was enforced probably varied. In 1424 a number of Egyptians were imprisoned for boiling mummies to sell the oil to European merchants,<sup>3</sup> but when John Sanderson, who visited Egypt in the late sixteenth century as an agent for the Turkey Company, shipped six hundred pounds of mummy back to England, he noted that this trade was *contrabanda*, but that it could be made possible by “words and money”. When the supply of genuine mummy was insufficient, or too expensive, it was supplemented (or substituted) by the desiccated bodies of travellers and animals who had died crossing the deserts of the Straits of Suez, and even toasted camel flesh was sometimes passed off as mummy. Mummy was considered to be especially effective in treating falls and bruises, and for preventing bleeding, and was recommended for these purposes by Francis Bacon and Robert Boyle. Despite the development of modern science

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<sup>2</sup> See Karl H. Dannenfeldt, “Egyptian ‘Mumia’”, *Sixteenth Century Journal* XVI 2 (1985): 163-80, quotation 165.

<sup>3</sup> See Philip Schwyzer, “Mummy is Become Merchandise: Literature and the Anglo-Egyptian Mummy Trade in the Seventeenth Century” in Gerald MacLean, ed., *Re-orienting the Renaissance: cultural exchanges with the East* (New York; Basingstoke: Palgrave Macmillan), 2005.

and medicine during the Enlightenment, mummy was still being listed in a 1905 German pharmacists' handbook, albeit with the caveat that supplies were mostly imitation rather than the real thing.<sup>4</sup>

### Pharaohs as Paint and Paper

The use of mummy as medicine, of Pharaohs as pharmaceuticals, so to speak, is well attested, but things become murkier when we consider other alleged uses of mummies, and an interesting aspect of these uses is how far they actually occurred, or indeed if they even occurred at all. For example, the oil paints Mummy Brown and Caput Mortem (Death's Head) were said to have been made from ground mummy or burnt mummy wrappings, and this seems to have been the case in some instances,<sup>5</sup> but it is also likely that the names were applied to paints of these shades made with a variety of materials including ground asphalt, which was confused with, and used medically as an alternative to, actual mummies.

Even more problematic is another alleged use of mummies, or to be more specific their bandages. It has been claimed that in mid-nineteenth century America, paper was produced commercially using the linen bandages of Egyptian mummies, and that actual publications printed on 'mummy paper' have been identified.<sup>6</sup> The most frequently cited is the *Syracuse Standard* (also known as the *Syracuse Daily Standard*). In a chronological history of paper and paper-making, it was stated that in 1856 the paper

boasted that its issue [date unspecified] was printed on paper made of rags imported directly from the land of the Pharaohs, on the banks of the Nile. These were said to have been stripped from the mummies.<sup>7</sup>

A later author managed to track down this issue, for July 31, 1856, but what it had actually said was subtly different.

Rags from Egypt. - Our Daily is now printed on paper made from rags imported directly from the land of the Pharaohs, on the banks of the Nile. They were imported by Mr. G. W. Ryan, the veteran paper manufacturer

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<sup>4</sup> Dannenfeldt, "Egyptian Mumia", 179.

<sup>5</sup> Philip McCouat, "The life and death of Mummy Brown", *Journal of Art in Society*, <http://www.artinsociety.com/the-life-and-death-of-mummy-brown.html>.

<sup>6</sup> E.g. see [https://en.wikipedia.org/wiki/Mummy\\_paper](https://en.wikipedia.org/wiki/Mummy_paper).

<sup>7</sup> Joel Munsell, *Chronology of the origin and progress of Paper and Paper-Making*, 5<sup>th</sup> edition (Albany: J Munsell, 1876), 149. [First edition 1857.]

at Marcellus Falls, in this county, and he thinks them quite as good as the general run of English and French rags.<sup>8</sup>

No mention, at least as quoted, of them being stripped from Egyptian mummies, although Egyptian rags were indeed imported into the US from 1855, when a cargo of 1215 bales worth \$25,000 arrived.<sup>9</sup>

An editorial in the same paper on August 19, 1856, less than three weeks later, proclaimed that

An Onondaga county man [the city of Syracuse is the county seat of Onondaga County], worshipful of the golden Eagle and not of the Egyptian Ibis, has put upon the market ‘paper made from the wrappings of mummies’. Could anything better illustrate the practical character of this age, and the intense materialism of America?

With an intense materialism that shears right through sentiment [...] this American sees fibre in all the mummied dead of Egypt...He would pass the cerements of Cleopatra through a paper mill as quick as he would the shirt of Winnebago.<sup>10</sup>

This seems an obvious reference to Ryan, who had been mentioned in the July issue, and whose paper mill at Marcellus Falls was about ten miles outside Syracuse. The article, however, was reprinted, and had originally appeared in the *Journal* in Albany, nearly two hundred miles away. The imported rags used to make the paper may have been stripped from mummies, but it seems more probable that the Albany paper had invented this detail, and used the story to make a satirical point about American values.

Two years later, in 1858, it was claimed that a Boston importer had bought forty thousand pounds of linen rags, said to have been taken from Egyptian mummies, and that when these were threshed as part of the paper manufacturing process, they produced thirteen thousand pounds of sand. Not only would this mean that about a third of the rags by weight was sand, which seems unlikely, even if only on the grounds that the purchaser would have paid for rags, not sand, and not

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<sup>8</sup> Nicholson Baker, “Virgin Mummies”, in *Double Fold: Libraries and the Assault on Paper* (New York: Random House, 2001), 61-62.

<sup>9</sup> Munsell, *Chronology*, 142-143.

<sup>10</sup> Dard Hunter, *Papermaking: The History and Technique of an Ancient Craft* (New York: Alfred A Knopf, 1947), 383-384.

want them adulterated in this way, but also the source of the claim was, again, the *Syracuse Standard*.<sup>11</sup> In August of the same year, the *Northern Home Journal*, August 12, carried an account of a visit to the Great Falls Mill in Gardiner, ME.

It has been estimated that some of the Egyptian rags contain about 40 percent dust and dirt. The dusts **doubtless** [my emphasis] consists of many fine particles of pharaoh's embalmed subjects, but not a few of the modern rags seem to have been spread upon the sands at the periodical overflow of the Nile, and received a deposit of the fine earth that has been washed down from the mountains of Abyssinia. This adds to the weight, but Yankees will not be sold twice in this manner.<sup>12</sup>

Again, the claim of contamination by sand and dust, this time of an even higher proportion, and an assumption that some of them were mummy bandages, but also that modern rags were coated with mud from the annual inundation, and the suggestion that wily foreigners were trying to pull a fast one, but that shrewd Yankees would not be caught twice paying for adulterated goods.

In 1859, a broadside [broadsheet in English usage] with a hymn for the bicentennial anniversary of the founding of Norwich CT was produced by the Chelsea Manufacturing Company (Manning, Perry & Co.) in Greenville, a suburb of Norwich. The company, which boasted of being the largest paper factory in the world, also claimed that the broadside was printed on paper made from Egyptian mummy bandages. An example of the broadside survives in the Rare Book Collection at Brown University.<sup>13</sup>

There are thus very limited examples of surviving publications which claimed to be printed on 'mummy paper'. Other alleged examples of printing mills using mummies for paper have been quoted, but although rich in colourful detail, these are essentially anecdotal. Two of the anecdotal accounts, involving the Stanwood Mill in Gardiner, Maine, and the Broadalbin Mill in New York, were second-hand, rather than claiming to be from direct experience, vague as to time, although one mentions the period 1855-1860, and may have been tall stories told to children, as one came from Stanwood's son, by then a retired law professor, and the other from a woman told the story about forty years previously by an

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<sup>11</sup> Baker, *Double Fold*, 62.

<sup>12</sup> S. J. Wolfe and Robert Singerman, *Mummies in Nineteenth Century America*. (McFarland & Co.: Jefferson NC, 2009), 188-189.

<sup>13</sup> <http://griffenmillhandmadepaper.com/mummy-paper.php>, "The Smoking Gun"; see also Wolfe and Singerman, *Mummies*, 188 and illustration 190-191.

old friend of her father.<sup>14</sup> Another anecdote is dated to 1866 and is very short on verifiable information.

The editor of the Bunker Hill Aurora said, that a few Sundays before, he heard a clergyman, in illustrating a point in his discourse, state that during the late war, a New York merchant at Alexandria, in Egypt, having occasion to furnish a ship with a freight homeward, was led, partly through fear of pirates, to load her with mummies from the famous Egyptian catacombs. On arriving here, the strange cargo was sold to a paper manufacturer in Connecticut, who threw the whole mass, the linen cerement, the bitumen and the poor remains of humanity, into the hopper, and had them ground to powder. “And”, added the speaker, “the words I am now reading to you, are written on some of this paper.”<sup>15</sup>

This, which claims that whole mummies were ground and pulped to produce paper, and the account relating to the Stanwood mill given to the historian of paper and printing Dard Hunter, which said that both the cloth wrapping and “papyrus filling”<sup>16</sup> of the mummies had been used for paper-making, raise several practical issues. On the one hand, if the production of paper from mummy bandages alone had taken place on any significant scale, it is surprising that there seems to be no mention of how the remaining mummies were disposed of. (Although other accounts claim that the bandages and mummies were separated in Egypt, usually citing Alexandria, or that the mummies were burned after having been stripped.)<sup>17</sup> On the other hand, if the *Aurora* story is true, and mummies were used whole, although papryi were re-used in the production of cartonnage mummy cases, papyrus was not normally used to pack body cavities in mummies themselves, with bags of natron or resin soaked bandages being used,<sup>18</sup> and it seems likely that any pulp produced from whole mummies would be so contaminated as to at best require extensive and expensive processing, and at worst to be unusable, even for low grade wrapping paper. This point had been made as long before as 1847, in the *Tri-Weekly Ohio Statesman* for July 17, which cited the American Egyptologist George Gliddon, who lived from an early age in Egypt, where his father was US Consul at

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<sup>14</sup> Hunter, *Papermaking*, 382-385, and especially footnote 383.

<sup>15</sup> Munsell, *Chronology*, 198.

<sup>16</sup> Hunter, *Papermaking*, 382.

<sup>17</sup> Wolfe and Singerman, *Mummies*, 189.

<sup>18</sup> Shaw and Nicholson, *The Dictionary of Ancient Egypt*, (London: British Museum Press, 2002), 191.

Alexandria, and who later became US Vice-Consul in Egypt himself, as its source.<sup>19</sup>

In the list of those proposed [materials for paper making] was the one now suggested, mummy cloths; which, on investigation, were proved to be utterly valueless for the object in view, from the following causes... the expense of exhuming those [mummies] now left would render the undertaking profitless [...] For the clothes of the few mummies now remaining of the old empire [...] not having been bitumened [...] are perfectly rotten, and of course unfit for paper; while those [...] from mummies of a later date [...], are so impregnated with bitumen and are often so completely scorched as to be still more unsuitable for paper.<sup>20</sup>

### Doctors of London and Cairo

For the origins of the belief that bandages from mummies could be turned into paper, we need to turn from America to Egypt. In his 1834 *History of Egyptian Mummies* the surgeon and serial unroller of mummies Thomas Pettigrew noted that

AbdAllatif says that in some mummies more than 1000 yards [of bandages] have been used, and that the Bedouins were in the habit of taking it away to make vestments, or to sell for the manufacture of paper for the grocers.<sup>21</sup>

Pettigrew's reference is to Abd al-Latif al-Baghdadi, who in the late twelfth and early thirteenth century AD taught medicine and philosophy at Cairo. A translation of his writings on Egypt was made by Silvestre de Sacy in 1806.<sup>22</sup> It is easy to take what Al-Latif wrote at face value, but it has been suggested that he was satirising the greed which led to much destruction of Ancient Egyptian structures in the mistaken belief that treasure was hidden inside or under them,<sup>23</sup>

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<sup>19</sup> M. L. Bierbrier, ed., *Who Was Who In Egyptology*, 4<sup>th</sup> revised edition (London: The Egypt Exploration Society, 2012), 215.

<sup>20</sup> Wolfe and Singerman *Mummies*, 183.

<sup>21</sup> Thomas Pettigrew, *History of Egyptian Mummies* (London: Longman, Rees, Orme, Brown, Green and Longman, 1834), 89.

<sup>22</sup> Silvestre De Sacy, *Chrestomathie Arabe* (Paris 1806). English translation in John Pinkerton, *A General Collection of the best and most interesting travels in all parts of the world* (London: Longman et al., 1814), 15: 802 ff.

<sup>23</sup> Joseph A. Dane, *The myth of print culture: essays on evidence, textuality, and bibliographical method* (Toronto and London: University of Toronto Press, 2003), 172-173.

and which also led to the commercial sale to Europeans on a large scale of mummy for medicinal use. It is interesting to note that in the anecdotal account of mummy paper said to have been produced at the Stanwood Mill in Maine nearly seven hundred years later, it was said to have been a coarse brown paper used by grocers, butchers, and other shopkeepers.

The earliest modern reference to making paper from mummy wrappings seems to be a short piece in the December 10, 1825 issue of the *Independent Chronicle & Boston Patriot*. This said that

It is intended to build a paper mill on the banks of the Nile, and to manufacture writing paper on a small scale. The Pacha it appears regards the contents of the ancient pyramids and tombs as among the resources of the country; for after a few questions about cotton and hemp rags, he enquired whether the wrappings of mummies would not make good paper.<sup>24</sup>

The Pacha in question, Muhammad Ali, certainly supported the construction of numerous factories and other facilities, in an attempt to create an industrial infrastructure in Egypt, even though almost all of them subsequently failed when he was forced to allow imports of cheaper foreign manufactured goods. He was also quite prepared to use surviving Ancient Egyptian and Graeco-Roman structures as sources of building materials, and at one point seems to have been prepared to demolish the pyramids of Giza to build the first Nile Barrage.<sup>25</sup> However, the suggestion that a paper mill might be built does not mean that it was, nor that mummy bandages were used as raw materials.

A much more detailed and specific source is an article written in 1854 by Dr Isaiah Deck for the *Transactions of the American Institute of the City of New York*, entitled “On a Supply of Paper Material from the Mummy Pits of Egypt”.<sup>26</sup> In it, he estimated that the linen from the accumulated human and animal mummies of Egypt would be sufficient to satisfy the demand for paper in the USA for about fourteen years, allowing time for a substitute source to be identified and developed. Around the same time as Deck’s article, the American (and British) paper industry does indeed seem to have experienced a chronic supply crisis, due

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<sup>24</sup> Wolfe and Singerman, *Mummies*, 180.

<sup>25</sup> <http://www.americanscientist.org/issues/pub/the-near-destruction-of-giza/1>.

<sup>26</sup> Isaiah Deck, “On a Supply of Paper Material from the Mummy Pits of Egypt”, in *Transactions of the American Institute of the City of New-York, for the year 1854*. (Albany: C. Van Benthuisen, 1855), 83-93. (Available as PDF on: <http://ia902606.us.archive.org/18/items/transactionsofam131854amer/transactionsofam131854amer.pdf>)

to rising demand for paper for books and newspapers, as well as other paper products, and increased competition for the rags from which paper was made before the development of wood pulp paper, which meant that domestic supplies often had to be supplemented with imported rags.<sup>27</sup> According to Deck, the original version of his article appeared in *Lo Spettatore Egiziano*, an Italian language newspaper published in Cairo.<sup>28</sup> He does not say when, but the most likely date is 1847, as it is referred to in a poem on page 224 of the May 29, 1847 issue of *Punch* magazine in England, which was subsequently reprinted in America in the July 3, [1847?] issue of *Littell's Living Age*.<sup>29</sup> The *Punch* poem, entitled “Musings on Mummy Paper”, takes as its epigraph a quote from the *Spettatore Egiziano*:

“It has been proposed to MEHEMET ALI to convert into paper the cloth of the mummies, of which it is calculated that 420,000,000 must be deposited in the pits of Egypt.”

or, as the poem puts it

They're going to take the bier-cloths,  
That wrap the sons and daughters of old Nile,  
From gilded kings to rough-dressed rank and file,  
And turn them into paper!<sup>30</sup>

The poem itself implies that the *Spettatore* article was anonymous, as it says

We're not told, in the *Egyptian Spectator*,  
What daring speculator  
Conceived the notion [...]

It goes on to suggest that he was inspired by watching one of Thomas Pettigrew's mummy unrollings, and also mentions the popular belief that wheat found in Ancient Egyptian tombs, so-called Mummy Wheat, had been successfully grown and produced extraordinary yields.<sup>31</sup> The *Punch* poem does not seem to treat the item which inspired it seriously, and is clearly satirical in tone, as it concluded by suggesting that Mummy Paper should not

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<sup>27</sup> Dane, *Myth*, 171.

<sup>28</sup> The British Library has twenty issues of it, running from September 29 1855 to February 18 1856, but despite these being labelled as “Anno 1<sup>o</sup>”, and running from No. 1 to No. 20, there must have been a previous incarnation of the paper, as Deck's reference to it appears in 1854, and *Punch* refers to it in 1847.

<sup>29</sup> Wolfe and Singerman, *Mummies*, 181.

<sup>30</sup> Baker, *Double Fold*, 59-60.

<sup>31</sup> [http://www.egyptinengland.co.uk/newsletter\\_2015.html#april\\_2015\\_newsletter](http://www.egyptinengland.co.uk/newsletter_2015.html#april_2015_newsletter).

[...] receive the vulgar black and white,  
Impressed by common types on common reams;  
No – mummy-paper should record the dreams  
Of those who'd have society rolled back  
Into the track  
Which the world left five hundred years ago -  
The lovers of the stony *statu quo*  
“Standers in the old ways,” whom nothing stirs,  
To whom “the wisdom of our ancestors”  
Is wisdom yesterday, today, forever;  
Who, midst a world of change, boast, blind, of changing never.

And then went on to suggest politicians like William Ewart Gladstone (Prime Minister of Great Britain 1868-1874) to whom this might apply.

Deck's proposal was also reported in three American newspapers, between July and December 1847, none of which identified him as the author, but two of which specifically referred to *Lo Spettatore Egiziano*.<sup>32</sup> Perhaps significantly, one of them was *The Cold Water Fountain*, a Temperance newspaper, which was published in Gardiner, ME, where the Stanwood Mill and others were located.<sup>33</sup>

### **A fall in the market for mummies?**

We would seem to be on firmer ground with articles on mummy paper in scholarly journals, and one did appear in *Scientific American* for June 19, 1847. Except that it was quite a different publication in those days, even including poetry, and rather than being a detailed article, this turns out to be a short, and probably humorous, news item.

### **New Speculation**

Mehemet Ali has found a new source of revenue, in the fine linen in which the immense deposits of mummies are wrapped, by applying it to the manufacture of paper. Calculations, founded upon mummy statistics, make the linen swathings of the Ancient Egyptians worth \$21,000,006. This is better than stealing pennies from the eyes of dead men.<sup>34</sup>

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<sup>32</sup> Wolfe and Singerman, *Mummies*, 181-183.

<sup>33</sup> Wolfe and Singerman, *Mummies*, 182, 189.

<sup>34</sup> *Scientific American*, Volume 2, Issue 39, June 19 1847, 309.

Although this has been cited as evidence that serious consideration was given to the economics of a trade in mummy wrappings, another article from the same journal two years later tends to suggest otherwise, not least because the suspiciously exact figure quoted in the first item has fallen so much.

### Mummy Cloths

(Cairo newspapers) enter into a long calculation of the number of mummies which must have been embalmed and deposited in crypts, pits, sepulchral chambers, &c, during the existence of Ancient Egypt as a great and populous country; and proposes that Mahomet Pasha should allow their clothing to become an article of extended commerce in the linen trade, valued at least, at ten millions and a half of dollars!! The digging up this treasure, it is farther calculated, would bring to light jewels and other materials of archæological price!<sup>35</sup>

Al-Latif is quoted without comment by Deck in his paper,<sup>36</sup> but just as Al-Latif's account can be read as satire, so the *Scientific American* pieces can be seen as satirical references to the rapacious economic practices of Muhammad Ali and his immediate successors, and Deck's paper has been seen as an extended piece of irony along the lines of Jonathan Swift's *A Modest Proposal*.<sup>37</sup> Read in this way it is in fact a protest against the destruction of Ancient Egyptian remains.

[...] those who would at the first blush carp at and condemn it as fabulous in its application, may, on investigation, be constrained to admit that in this utilitarian age affected prejudice must give way to the necessities which the mass of society demands; and repulsive as it may appear to the over sensitive, it is entirely shorn of this feeling when viewed with the anticipated famine of paper material looming up in the distance [...].<sup>38</sup>

As the examples cited earlier show, references to mummy paper, and the alleged use of mummy bandages to produce it, continued to occur from time to time in the American press, but from the middle of the nineteenth century wood pulp began to replace rags for paper-making, and once this process became commercially established, it would have made the importation of raw materials from other, more exotic sources, less viable.

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<sup>35</sup> *Scientific American*, Vol 4 No. 47, August 11 1849 p. 373.

<sup>36</sup> Deck, "Supply", 89.

<sup>37</sup> Dane, *Myth*, 179.

<sup>38</sup> Deck, "Supply", 92.

### Throw on another Pharaoh

From 1848, American newspapers also carried items claiming that Egyptian human and animal mummies were used as fuel on the Egyptian railways. The February 1, 1848 edition of the *Wachusett Star* noted that “the powers of Europe” were about to build a railway in Egypt, as part of the so-called ‘Overland Route’ to India, and went on to say that

Fuel is by no means abundant in that part of the world [i.e. Egypt] and to obviate the difficulty a bold schemer has proposed to use the mummies that fill those gigantic and mysterious sepulchers, for fuel to drive the locomotives!<sup>39</sup>

It added that before the mummies were used, the bandages in which they were wrapped were stripped off and sent to France to make newspaper.

Some years later, there was an article in the *Syracuse Daily Standard* of September 27, 1859, which claimed that mummies were used as fuel in Egypt “On the first locomotive run” and that “The supply of mummies is said to be almost inexhaustible, and [they] are used by the cord.”<sup>40</sup> Later that year, the December 3 issue of *Scientific American* made the same claim. Although it credited as its source “A foreign correspondent” it is likely that it was in fact the *Standard* article, as it quoted the same figure for the Egyptian rail network, 300 miles, and also said that the supply of mummies was “almost inexhaustible”, and that they were used by the cord. Ten years later, Mark Twain wrote of using the railway from Cairo to Alexandria, on which he claimed

the fuel they use for the locomotive is composed of mummies... purchased by the ton or by the graveyard for that purpose, and that sometimes one hears the profane engineer call out pettishly, ‘D—n those plebeians, they don’t burn worth a cent – pass out a King’.<sup>41</sup>

Twain, it is hardly necessary to observe, is clearly writing humorously, as we can also assume was the English journalist who in 1896 wrote that

Cleopatra is dead [...] her very mummy has disappeared in the stokehole of a Nile Steamboat.<sup>42</sup>

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<sup>39</sup> Wolfe and Singerman, *Mummies*, 177.

<sup>40</sup> An American measure of firewood, 128 cubic feet, or approximately 3.62 cubic metres. See <http://worldforestindustries.com/forest-biofuel/firewood/firewood-measurements/>

<sup>41</sup> Mark Twain, *The Innocents Abroad* (Hartford: American Publishing Co., 1869), 632.

<sup>42</sup> *The Idler*, April 1896, 468.

However, Professor David Stanwood, son of Augustus Stanwood, whose paper mill at Gardiner in Maine was supposed to have produced mummy paper, may have been serious when he claimed, without giving any dates, that

[...] during a ten-year period the locomotives of Egypt made use of no other fuel than that furnished by the well-wrapped, compact mummies.<sup>43</sup>

To put these references into perspective, it is worth looking at the background to railways in Egypt. The first proposal to build one, from Alexandria to Cairo, was in 1834, by the English civil engineer Thomas Galloway, but this was rejected by Muhammad Ali, and it was not until 1851 that his successor as Khedive, Abbas Pasha, signed a contract for £56,000 with the British railway and civil engineer Robert Stephenson to build one, and in 1852 the first locomotives, of standard British designs, arrived. It was not until 1856 that the railway actually reached Cairo, about 120 miles from Alexandria, and not until 1874 that a line reached Assiut, about 230 miles from Cairo.<sup>44</sup> As there are no significant deposits of coal in Egypt, all the coke and coal used would have had to be imported, and still was in the early twentieth century.<sup>45</sup> Just as the rails and locomotives for the railway were manufactured in Britain, and imported, the obvious source for the fuel was British coal, rather than Egyptian mummies. As far back as 1833, when Captain C. F. Head was outlining a proposal for a steamer route to India, via Egypt, he quoted rates for supplying coal for it. From Liverpool or Glasgow, where steam coal cost 15s or 12s a ton, respectively, shipped to Aden, he estimated it would cost at maximum 50s a ton. He estimated the cost to Suez (no canal in 1833, when the book which included his proposal was published) as 60s per ton, and to Alexandria, via the Mediterranean, at only 35s per ton. He quotes actual estimates which he had obtained from London coal merchants of 34s a ton delivered to Alexandria, with a maximum price of 36s.<sup>46</sup> Coaling stations to service sea trade between Britain and India were established at Port Said and Suez, as well as at Aden in the Yemen, and until the 1920s and 30s, when oil began to be used, coal exports to these stations were on an industrial scale. The early locomotive engineers and drivers on the Egyptian railway were European, mainly English and French, and have been described as

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<sup>43</sup> Hunter, *Papermaking*, 287-288.

<sup>44</sup> Gary Goldfinch, *Steel on the Sand. The History of Egypt and its Railways* (Dorset: Finial Publishing, 2003).

<sup>45</sup> Goldfinch, *Steel*, 3, 25.

<sup>46</sup> Charles Franklin Head, *Eastern and Egyptian Scenery* (London: Smith Elder, 1833), 72.

“the pilots of their day”.<sup>47</sup> Not only is it highly unlikely that there was any need to use mummies as fuel, given the well established (and lucrative) arrangements for coal supplies from Britain, but drivers and engineers would have been aware of the historical, not to say monetary, value of mummies, and at the very least would have been expected to comment on their use as fuel.

An interesting variation on the ‘mummies as fuel’ trope occurs in a short piece in *Bizarre*, a fortnightly American magazine, which had an item in its issue for the fortnight ending Saturday March 19, 1853 (Vol. II. No. 25, p. 286.)

‘ - Mummy Steaks,’ The last luxury introduced into London, are nothing more nor less than a regular beef-steak, cooked upon a fire made of Egyptian mummies. The mummies are broken up like hickory or maple wood, and the steak is laid upon the coals which proceed from their ignition. The flavour of cooking generally is greatly enriched by this peculiar fuel; but a beef-steak is sure to gather an antiquated bituminous taste therefrom, which gourmands describe as especially delicious.

To date, corroborative accounts of these *gourmands* rhapsodising about the savour of steak grilled over Sesostris have proved elusive.

### **Pharaohs as Fertiliser**

Yet another alleged use of Egyptian mummies was as fertiliser. In an interview in 2006, Bob Kinsey, a retired former paper manager at a paper mill in Winslow ME, told how while visiting Alexandria in Egypt, he asked tour guides about mummy paper.

They replied they were not supposed to talk about it, but he elicited from them the information that as the rail line was being laid from Cairo to Alexandria, the engineers kept uncovering vast repositories of human and animal mummies.<sup>48</sup> The smaller ones were burned as fuel in the locomotives and the larger wrapped ones went to Alexandria where there was a thriving industry in the separation of cloth from bodies. The cloth

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<sup>47</sup> This and other information on Egyptian railways from Mark Goldfinch, who wrote as Gary Goldfinch, personal communication, March 2017.

<sup>48</sup> If this had been the case, Egyptological sources would be expected to mention these, and the circumstances of their discovery, as well as the destruction of the mummies. I am not aware of any such references.

was shipped into the international rag trade and the bodies were ground up for fertilizer and sent chiefly to England for the rose gardens.<sup>49</sup>

Nineteenth century press items also made similar claims, and in a parallel to the concept of Mummy Wheat, where bread made from crops grown from it was said to have been served at banquets, these press pieces referred to “mummy flour” made from the ground mummies, and mummies eaten in the form of bread grown with fertiliser made from mummies.<sup>50</sup>

Here, it is possible to see a verifiable foundation for such claims, albeit one that may be based on a single event. Around 1888, an Egyptian farmer at Beni Hassan uncovered the remains of a sacred animal necropolis, with a large quantity of mummified cats. Around 180,000 of these, weighing around 19-20 tons, were bought by an Alexandrian merchant, and sold for £3 13s 9d per ton. They were shipped to England as two cargoes in the steamers *Pharos* and *Thebes* of the Moss Line, and auctioned in Liverpool by Messrs. James Gordon and Co. on February 10, 1890. Interest in the more intact mummies (almost entirely heads) was keen, and these were sold at prices ranging from 1s 9d to 4s 6d. The remainder of the cargoes were sold to Messrs. Leventon & Co. of Liverpool, who imported bones from Mediterranean ports, and guano from further afield, and were ground to be used for fertiliser. A number of mummified cat heads and other identifiable parts of their bodies found their way into museums, including some which were acquired by the Liverpool Museum.<sup>51</sup>

### **Mummy Materials – Myth or Merchandise?**

The use of mummies, and their bandages, as medicine, paint, paper, fuel, and fertiliser have all been stated as fact, but as one writer observed when considering the claims for mummy paper, mistaken beliefs can emerge and persist simply because they are “interesting, coherent, and easily expressed”.<sup>52</sup> It is also the case that as such claims are repeated, the cumulative effect is to encourage belief, but repetition does not necessarily indicate that the claims are based on sound evidence. Looking at the supposed evidence base for mummy paper, a number of interesting features can be identified. It is actually quite limited, and also quite focussed, in time, location, and type of media.

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<sup>49</sup> Interviewed by S. J. Wolfe, July 19, 2006 and quoted in Wolfe and Singerman *Mummies*, 253, footnote 50.

<sup>50</sup> Wolfe and Singerman, *Mummies*, 193-194.

<sup>51</sup> At least nineteen items in the contemporary press. One of the more detailed is in the *Bristol Mercury and Daily Post* of February 11, 1890 ‘Sale of Feline Mummies’.

<sup>52</sup> Dane, *Myth*, 170.

From what seems to be the earliest mention, in the *Independent Chronicle & Boston Patriot* in 1825, the next cluster of references occur with the original publication of Deck's article in *Lo Spettatore Egiziano*, Punch's poem, its reprint in the USA, and the *Scientific American* piece in 1847, and another piece in *Scientific American* two years later. Then, there is a gap until 1854, when Deck's article, or a revised version of it, appeared, following which there are references in 1856, 1858, and 1859. References to mummies as locomotive fuel are scarcer, but also occur in 1848 and 1859. There is Twain's reference, but this does not occur until 1869, and it is also from a work of travel writing, rather than a newspaper or magazine. As well as being focussed around a narrow range of dates, the references to mummy paper and mummy fuel are concentrated in press reports. Most of these, in turn, are American, and within these there is a geographical focus in the north-east United States, around New York state, Maine, and Connecticut, with the *Syracuse Daily Standard* featuring prominently.<sup>53</sup> It could be argued that this corresponds to the concentration of paper making factories within these states, and the production of paper from mummy bandages, but there are other factors that should lead us to question the reliability of these sources.

A significant number of pieces on mummy paper, apart from those that drew on the arguments and calculations of either version of Deck's article, were reprinted in other journals, either verbatim or with the use of very similar phrasing. *The Northern Home Journal* of August 12, 1858 wrote of how

The Egyptian rags [at Great Falls Mill in Gardiner ME] had been collected from all the corners of the Pacha's dominions – from the living and the dead. How many cast-off garments of hadjis and howadjis; how many tons of big, loose, Turkish, ragged breeches; and how many head pieces in the shape of old doffed turbans, the deponent sayeth not.<sup>54</sup>

Four years later, the *Davenport Daily Gazette*, an Iowa paper, wrote in its August fourth issue of how Egyptian rags, including mummy bandages, were to be made into paper for Ayer & Co. of Massachusetts, a sweet manufacturing company, and described them as

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<sup>53</sup> Aufderheide, dealing with the topic of mummy paper, wrote "I have been unable to confirm a persistent rumor about paper manufacture from mummy wrappings in Canada." Arthur Aufderheide, *The Scientific Study of Mummies* (Cambridge: Cambridge University Press, 2003), 523.

<sup>54</sup> Wolfe and Singerman, *Mummies*, 188.

Evidently gathered from all classes and quarters of the Pacha's dominions – the cast-off garments of Hadjis and Howadjis – white linen turbans, loose breeches, and flowing robes.<sup>55</sup>

The *Syracuse Daily Standard* of September 27, 1859 described the supply of mummies for locomotive fuel as “almost inexhaustible”, and mummies as being used by the cord, and *Scientific American* December 3, 1859 also wrote of an “almost inexhaustible” supply being used by the cord.<sup>56</sup> Interestingly, by 1879 the *Mountain Democrat*, in its issue of November 22 was writing that

The mummy crop of Egypt is running short and the price is going up since it was found they make good lamp black.<sup>57</sup>

Here, rather than emphasising the profligate use of an apparently inexhaustible supply, the piece is emphasising how over-exploitation has driven the price of the material up, but the claimed use of the mummies is still as a commodity. The use of identical or very similar phrasing suggests busy reporters looking for filler or colour pieces, and recycling copy without checking its accuracy, rather than careful investigative journalism. The style and language of many of these pieces is also that of popular journalism, replete with clichés. Egypt is filled with “gigantic and mysterious sepulchers”, mummies are wrapped in “cerements” of “sumptuous linen”, or “the finest linen”. Bandages were “the garments of Pharaohs”, and mummies were “defunct kings”. Mummies ground as fertiliser were sent to England not to manure fields, but for “the rose gardens” of that country.<sup>58</sup>

Another interesting feature of these newspaper and magazine items is that they often draw a moral conclusion from the events that they report. The *Northern Home Journal*, August 12, 1858, asked rhetorically

How little did the religious old Egyptians think that they were piling away stores for the future cash accounts of Turkomans, and that the linen folds which so carefully bandaged their holy dead, should one day make highly calendared paper.<sup>59</sup>

The *Davenport Daily Gazette*, August 8 1862 similarly observed of Egyptian rags alleged to contain mummy wrappings that

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<sup>55</sup> Wolfe and Singerman, *Mummies*, 192, who note that this piece was itself reprinted from the *Daily Evening Journal*, presumably also of Iowa.

<sup>56</sup> Wolfe and Singerman, *Mummies*, 177.

<sup>57</sup> Wolfe and Singerman, *Mummies*, 194.

<sup>58</sup> Wolfe and Singerman, *Mummies*, Chapter 6 and footnotes.

<sup>59</sup> Wolfe and Singerman, *Mummies*, 188-189.

They are now to be made into paper for Ayer's Almanacs, and thus, after having wrapped the dead for thirty centuries, are used to warn the living from the narrow house which they have so long inhabited, and to which, in spite of all our guards and cautions, we must surely go.<sup>60</sup>

Similarly, the *Wachusett Star* of February 1 1848 asked its readers to

Think of a Sesostris or pharaoh, disturbed at last from the balsamic eternity of asphaltum, myrrh and frankincense in which he has slept ten thousand years [sic], and crammed into the capacious and fiery maw of a locomotive to become the means of dragging a train of Englishmen, Frenchmen and Yankees across his own kingdom.<sup>61</sup>

When the *Scientific American* published a similar piece in its edition of December 3, 1859, it observed in the same vein

What a destiny for the Egyptian kings! Think of your body being carefully preserved for three thousand years, and then used to "fire up" a locomotive! To what base uses do we come at last!<sup>62</sup>

When the various accounts of mummy paper are considered together, it becomes clear that they often contradict each other. In some, mummies are shipped whole, in others they are stripped of their bandages in Egypt before shipping. Mummies brought to the United States were said to be stored by Augustus Stanwood in pits dug at secret locations, the knowledge of which died with him, but in another version of the story the mummies were burned after having been stripped of their bandages. Shiploads of mummies were exported from Egypt, but their export was also banned by Muhammad Ali, who wanted to use their materials himself.<sup>63</sup>

Typically, these accounts display a number of features also characteristic of modern urban myths. They are strong on colourful circumstantial detail, but not verifiable information, and tend to occur in a number of differing versions. They circulate widely, but without additional corroborative evidence being added. A significant number of them are anecdotal, and variants of them can contradict each other. Although claims for the commercial use of mummies have been made since the thirteenth century and Al-Latif, they occur most often in a fairly narrow time span, and are concentrated in the American popular press.

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<sup>60</sup> Wolfe and Singerman, *Mummies*, 192.

<sup>61</sup> Wolfe and Singerman, *Mummies*, 177.

<sup>62</sup> Wolfe and Singerman, *Mummies*, 177.

<sup>63</sup> Wolfe and Singerman, *Mummies*, Chapter 6 and footnotes.

Collectively, if true, they would imply a massive use of Egyptian mummies, for a wide variety of purposes, and corroborative evidence from other types of source would be expected. In some cases, such as the use of cat mummies for fertiliser, this can be found, but this is an exception, and in most cases the lack of corroboration must raise doubts about claims for the use of mummy as raw materials. Where alternative sources are available, they do not support such claims. For example, when the *Tri-Weekly Ohio Statesman* of July 17, 1847 article alluded to earlier quoted “Mr Gliddon, our authority on Egyptian matters”, he was dismissive

[Gliddon] has written a letter to Park Benjamin, of the “American Mail”, in which he says the project of making paper out of mummy cloths, from which the Pacha of Egypt was to reap four millions of dollars, is all Cairo claptrap.<sup>64</sup>

In 1849 Gliddon wrote *An Appeal to the Antiquaries of Europe on the Destruction of the Monuments of Egypt*, and could have been expected to attack the wholesale destruction of mummies for raw materials had it been taking place.

### A Core of Truth?

So is there any truth in these claims? Certainly, there can be little doubt about the medicinal use of mummy, but this involved the use of mummy as mummy, rather than as the raw material for an industrial process, and one result of these claimed industrial uses is that it is almost impossible to verify the raw material from the final product, as it is effectively destroyed during the process of manufacture or use.<sup>65</sup>

If the large-scale, industrial use of mummies is a myth, such claims may still have been based on isolated incidents and casual use, and a single incident could be taken as representative of a continuing practice. The sale for use as fertiliser of cat mummies alluded to above is well documented, although had it been one of a series of such events, we would expect these too to be equally well recorded. Similarly, while it is unlikely that the claim made by the traveller James Silk Buckingham, that mummies were routinely used as domestic fuel in Egypt, was accurate,<sup>66</sup> it is quite plausible, especially when Ancient Egyptian tombs were occupied as dwellings by modern Egyptians, that fragments of mummy cases

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<sup>64</sup> Wolfe and Singerman, *Mummies*, 183.

<sup>65</sup> Wolfe and Singerman, *Mummies*, 200.

<sup>66</sup> Buckingham, J. *Notes of the Buckingham Lectures* (New York: Leavitt, Lord & Co., 1838), 104.

and even mummies themselves would be used opportunistically as fuel.<sup>67</sup> At least one account, albeit a relatively late one from 1878, in a magazine account of the Overland Route to India, does exist of the large-scale burning of Egyptian mummies.

Our party of four drove to a railway station a few miles out of Cairo, and then took the train to a station some distance further on, where our dragoman provided us with donkeys to take us to the ancient city of Memphis.

... we trudged on along the edge of the desert to SAKKARA, seeing on the way many Pyramids, all more or less falling to decay, and past the Necropolis, or city of the dead, where more than ten thousand mummies have lately been exhumed!

The Arabs have burned them in great heaps, and as you ride by you look upon scorched bones and pieces of charred bodies, a ghastly pile. I held in my hand one withered brown face, whose features were plain to see in their thin covering of sere-cloth, welded into the very flesh. I also picked up two human legs tightly wrapped in their bandages.<sup>68</sup>

However, it is interesting here that although the party had travelled part of the way by rail, no mention was made, even as a former practice, of mummies being used as locomotive fuel, and the excavated mummies are destroyed as apparently valueless, and not utilised commercially.

It is also possible that isolated experiments were conducted to test the practicality of using mummy bandages as the raw material for paper. In the same article from the *Tri-Weekly Ohio Statesman* quoted above, it was also noted that

In 1838 Mr Gliddon carried out from this country [i.e. Egypt] materials, samples, &c. for the conversion of all Nilotic materials into paper.<sup>69</sup>

Again, if the experiments suggested by this were carried out, we would expect additional mentions from other sources if they had been more than a one off.

As many of the references to the commercial uses of mummies appear in American publications, it is worth considering what factors within the United States might have encouraged their spread, other than the well-established American literary tradition of Tall Tales. One of these could have been the usage

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<sup>67</sup> See Aufderheide, *The Scientific Study of Mummies*, 524 on the opportunistic use of mummy remains in nineteenth century Thebes, and by Bedouin.

<sup>68</sup> *Golden Hours*, December 1878, p. 833.

<sup>69</sup> Wolfe and Singerman, *Mummies*, 183.

of trade terminology. A grand-daughter of the paper-making Gardiner after whom the town was named recalled that

The day of wood pulp was dawning, the day of rags was drawing to a close, and with it – or so it seemed – the romance of the ancient trade. Linen clippings, “domestics,” “Blue Egyptian.” [...] “Blue Egyptian” were what their name implies – indigo cotton rags, dirty and odiferous, yet with an aroma all their own [...].<sup>70</sup>

Reporters visiting paper factories and being shown piles of rags from Egypt, some of them described as Blue Egyptian, and others “old doffed turbans” or simply “white linen turbans”, might well have given in to the exercise of journalistic licence, and described the latter as the far more romantic “mummy bandages”. Journalism is about finding an angle, and the exoticism of Ancient Egypt has always been a popular one. Everybody likes a good story, especially if it has a moral, and as we have seen newspapers were not slow to draw morals from what they claimed were the undignified ends of bandaged Pharaohs. Ultimately, though much has been written about the Ancient Egyptians, probably little or nothing has been written on them.

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<sup>70</sup> Wolfe and Singerman, *Mummies*, 192.