

THE COFFIN OF PASESHES: A TREATMENT

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ABSTRACT

In 1997, Parker Conservation, Inc. of Gentry, AR was contacted about possibly treating a damaged Egyptian Late Period (800 BC) coffin prior to exhibition. The coffin, when examined before treatment, was a modest example of a hand-painted coffin by a provincial scribe, whose dedication to text was at best minimal. The coffin consisted of a single log of cedar (possibly Lebanese), cut in half, hollowed out with shoulders and beard added to complete the profile. A bituminous coating covered the coffin with gesso and paint, completing the ornamentation.

This paper will deal with the treatment of the coffin as conducted by Parker Conservation, Inc. In addition, because almost nothing was known about the coffin, other than it was first identified in Los Angeles, CA on May 10, 1973 and verified by the Cairo Museum, a detailed history and complete translation of the coffin is included. All export and museum taxes were paid and the case was sent under government supervision, as verified by the intact seals on the outside of the shipping case.

MUMMIFICATION HISTORY – HERODOTUS

To more fully understand Egyptian funeral rites, the following is taken from a contemporary source at roughly the same time of the coffin's making. The text is by Herodotus, born possibly in Asia Minor around 490 to 480 BC. He traveled widely through the classical world and many of his reports are considered to be the best of the surviving first hand accounts of life in this area. In *Book Two*, he describes in a fair amount of detail the Egyptian funeral rites. In the passage below, Herodotus describes his observations of the Egyptian funeral processes.

“Mummification is a distinct profession. The embalmers, when a body is brought to them, produce specimen models in wood, painted to resemble nature, graded in quality; the best and most expensive kind is said to represent a being whose name I shrink from mentioning in this connection; the next best is somewhat inferior and cheaper; while the third sort is cheapest of all. After pointing out these differences in quality, they ask which of the three is required, and the kinsmen of the dead man, having agreed on a price, go away and leave the embalmers to do their work. The most perfect process is as follows: as much as possible of the brain is extracted through the nostrils with an iron hook, and what the hook cannot reach is rinsed out with drugs; next the flank is laid open with a flint knife and the whole contents of the abdomen removed; the cavity is then thoroughly cleansed and washed out; first with palm wine and again with an infusion of pounded spices. After that it is filled with pure bruised myrrh, cassia and every other aromatic substance with the exception of frankincense, and sewn up again, after which the body is placed in natrium, covered over entirely for seventy days—never longer. When this period, which must not be exceeded, is over, the body is washed and then wrapped from head to foot in linen cut into strips and smeared on the underside with gum, which is commonly used by the Egyptians instead of glue. In this condition the body is given back to the family, who have a wooden case made, shaped like the human figure, into which it is put. The case is then sealed up and stored in a sepulchral chamber, upright against the wall. When, for reasons of expense, the second quality is called for, the treatment is different; no incision is made and the intestines are not removed, but oil of cedar is injected with a syringe into the body through the anus which is afterwards stopped up to prevent the liquid from escap-

ing. The body is then pickled in natrium for the prescribed number of days, on the last of which the oil is drained off. The effect of which is so powerful that as it leaves the body it brings with it the stomach and intestines in a liquid state, and as the flesh, too, is dissolved by the natrium, nothing is left but the bones and skin. After this treatment it is returned to the family without further fuss.

The third method, used for embalming the bodies of the poor, is simply to clear out the intestines with a purge and keep the body seventy days in natrium. It is then given back to the family to be taken away.

When the wife of a distinguished man dies, or any woman who happens to be beautiful or well known, her body is not given to the embalmers immediately, but only after a lapse of three or four days. This is a precautionary measure to prevent the embalmers from violating the corpse, a thing which is said actually to have happened in the case of a woman who had just died. The culprit was given away by one of his fellow workmen. If anyone, either Egyptian or a foreigner, is found drowned in the river or killed by a crocodile, there is the strongest obligation upon the people of the nearest town to have the body embalmed in the most elaborate manner and buried in a consecrated burial-place; no one is allowed to touch it except the priests of the Nile—not even the relatives or friends; the priests alone prepare it for burial with their own hands and place it in the tomb, as if it were something more sacred than the body of a man.”

PASESHES – HIEROGLYPHIC

TRANSLATION – BRIAN E. SMITH

Before any treatment was started, a thorough visual examination was conducted on the coffin. Since a full translation had not been done on the coffin, it was deemed necessary to look into the background of the object more fully. To aid the

process, Parker Conservation, Inc., enlisted the assistance of Brian Smith, a graduate student at the University of Arkansas in Fayetteville. Brian had considerable translation skills as well as overseas experience in Egypt as a translator of hieroglyphics from this period. It was during this initial examination that the name Paseshes was first identified as belonging to the coffin.

Translation of the coffin provided some difficulties in that the text is hand written in a hurried Late Period style. Some spellings and a few signs remain in question, but most have been reconstructed on the majority of text.

The four sons of Horus who protected the viscera of the deceased (and were also patrons of the cardinal points of the compass) face the ventral center of the coffin. In front of each is a column of hieroglyphs that incompletely quote a particular formula that is well associated with each god. The text is shortened for the purpose of introducing each god by name, though a complete example of the quote is given below.

“Hapi says: ‘I am your son, O Osiris, I have come to be under your protection. I bind for you your enemies under you. I give to you your head forever.’”

From the example above, the nature of each god in their funerary context can be understood; each was depended upon to reconstitute the body of the deceased (identified as the chthonic god Osiris) for his resurrection in the afterlife. As to the literal translation of what we have on the coffin of Paseshes, only the quote from column 1a and 5a can be translated as the beginning of this quote:

Column 1a Hapi

Says Hapi: “I am (thy) son”

Column 1b Qebsennuf

Says Qebsennuf: (no quote)

Column 5a Amseti

Says Amseti: “There/Therefore I am (thy) son”

Column 5b Duamutef

Says Duamutef: (no quote)

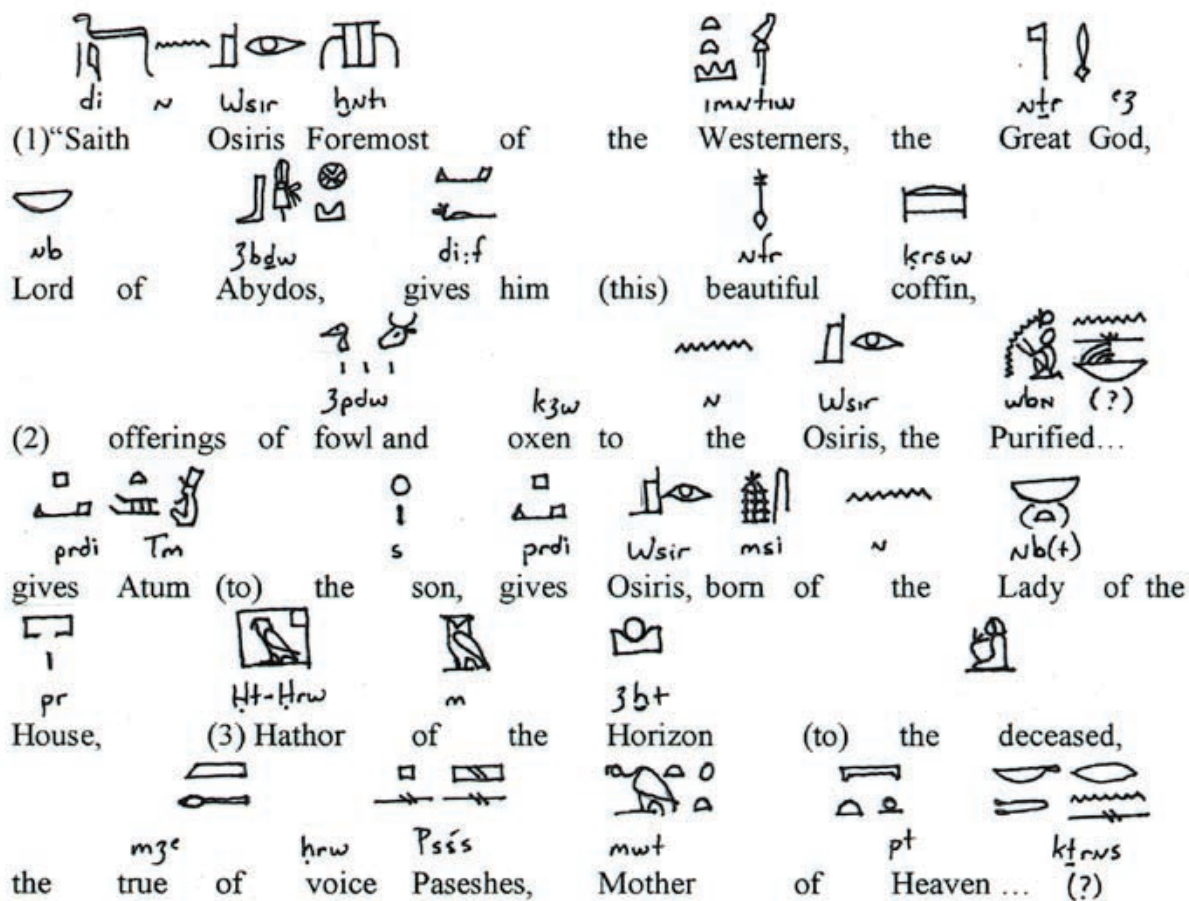


Figure 1

The exclusion of the second person personal possessive pronoun “thy” is indicated by parenthesis and inserted by inference. Perhaps the reason that column 1b and 5b do not have the introduction that is included in column 1a and 5a is the length of the names of the gods listed in the former columns. It was possibly understood that the whole quote (or a derivative thereof) was just understood by the simple fact that the gods were represented at all.

The three columns of the main text begin with the standard titles of Osiris, god of the underworld and spiritual resurrection. In the drawn copy, an attempt has been made to represent how the signs were painted on the surface of the coffin, thus the crudeness in size and shape of the hieroglyphs. Below, the written text is in horizontal form with a translation and transliteration of the signs in clearer signs. In parenthesis assigned numbers indicate each respective column of text. (fig. 1)

Interestingly enough, the proper name of the deceased does not follow after his titles “the Osiris, the Purified” as is standard. Also, the determinative for the deceased and his epithet “true of voice” precede his name. The last part of the main text ends confusingly with a few characters that spell out a word that could not be identified. No determinative or other indicators of meaning are included, so the translation ends only with the transliteration of the last part. The reference to the “Mother of Heaven” could only be a title of the preceding reference to Hathor “of the horizon.” In all, it seems that the text attempts to follow standard funerary examples with a few grammatical mistakes and a few obscure words. The verb form *prdi* is a common indicator of late period change in spelling and language from the original form of the verb *rdi*.

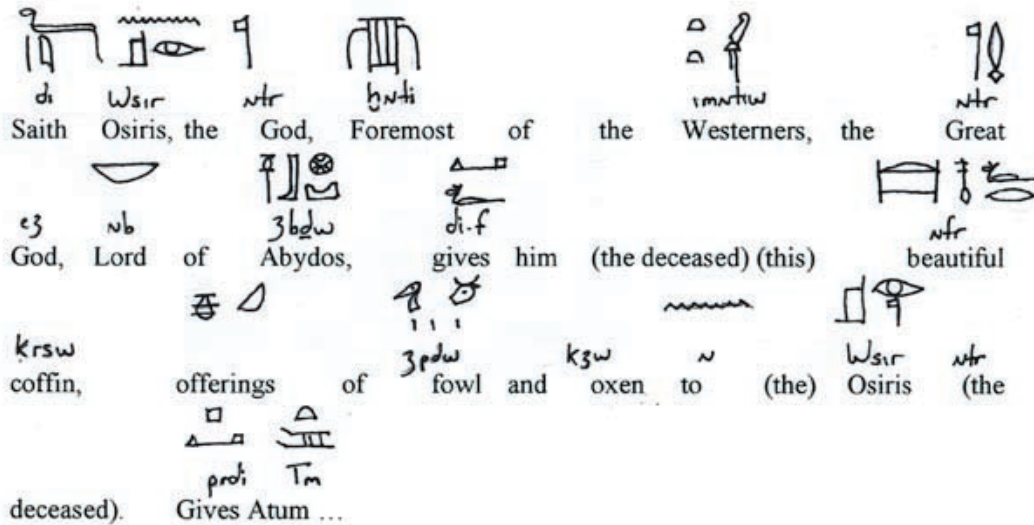


Figure 2

Along the back of the coffin on both sides are single columns that repeat text, except for a few minor spelling changes, as the beginning of the text on the ventral side of the coffin. (fig. 2)

The text on the coffin's left side is damaged at the beginning and also at its conclusion. Those characters that are visible are duplicates of the text on the right side; thus the translation can be made secure. However, at the end of this column, the wear and breaks render the text illegible. This portion of the text cannot be made certain with current knowledge.

There are interesting spellings in these columns, firstly the name of Osiris (W*s*-ir) is misspelled (Ir*w*s) on the right shoulder at the beginning of the line. There are also variant spellings of the city of Abydos, which are not to be taken as mistakes. These spellings of Osiris's sacred city are, however, different from the spelling in the main text on the torso of the coffin.

In Egypt's Late Period the traditionally complex language of the hieroglyphs become even more so with such variables as compounded and obscure sentences, loan words and spellings from exposure to other cultures and the common experience of human error. The coffin of Paseshes is a modest example of Late Period work, hand-painted in a provincial location by a scribe whose dedication to

the text was minimal. The text is brief, quite standard and hastily written. In the later centuries of Egypt, the funerary culture of the necropolis often worked in a mass production assembly line where specialists exploited their own talents. The coffin of Paseshes appears to be an example of this type of work.

We can also infer that Paseshes was probably a low level priest possibly from Abydos. Due to his stature, he was given a mid-level burial and not the lowest, usually found with a more common person. His ranking in the Egyptian culture did not warrant the complex ornamentation one of a higher social status would receive.

EGYPTIAN PIGMENTS – AN OVERVIEW Black, Dark-Brown or Purple

Black and very dark colors were obtained by the use of manganese-ochre pigments. The color of this black depends on the manganese content that is in the crystals of hematite. Hematite, when pure, is red. 5% manganese darkens the color to a brown and at 8% it is a reddish black (purple). Usually anything over an 8% mixture results in a true black. In Theban style pottery, the pigment has been identified not as manganese ochre, but as soot. Asphaltum is not a true pigment color. This material produces a blackish-brown solution in oil or turpentine. At several periods it has been used extensively as a glazing color. Asphal-

tum dries badly causing wrinkling and cracking. It develops almost every fault of oil colors in the extreme, especially if mixed with other oil colors. It is used as scumbling in some early cases. Asphalts are highly acid-resisting and softer varieties will impart flexibility. The harder versions will also add strength and resistance to handling. Asphalt tends to shorten the mixture or lessen the natural sticky adhesion of the wax component. The hardest and most brittle asphalt is Gilsonite, which is like a hard resin. Softer kinds of asphalt include varieties from Trinidad, Barbados, California and the Egyptian asphalts.

Red

The most common red used by the Egyptians is closely related to the manganese-ochre mentioned in the above section on blacks. The difference is that no manganese is present in the red hematite ochre. Red is commonly found in the Egyptian desert. The pigment could be added to a clay suspension for pottery coloring or mixed with oils or resins and used with a brush.

White

During the Dynastic Period, calcite and gypsum were substances used as white pigments. Gypsum also served as the bonding substance of blue, green and yellow pigments. In most cases, the color is more of a grey white or yellow white rather than a true white. Kaolin, which occurs naturally in the area south of Aswan, was used during the Christian era as a white pigment.

Yellow

Yellow ochre occurs naturally in the oasis and was a common pigment in ancient Egypt. Some yellows used in pottery and sometimes in paints used gyrostat, which contains iron and was imported from Cyprus.

Green

Green pigment that was used naturally consists of a mixture of gypsum and copper hydro-chloride. It is found naturally as the mineral atacamite, but it has been suggested the Egyptians may have prepared it artificially.

Blue

The use of blue in the ancient world in pottery is rare. The Egyptian technology is worth mentioning. The blue that is most unique is not the "Egyptian blue" used for wall painting or decorating coffins. This pigment usually belongs to the spinel group and the blue color is caused by a cobalt ion with gypsum as a bonding agent. There are other variations as well. What is unique about their use of blue is the Egyptian's use of cobalt blue. This pigment was (re)discovered in 1804 by L.J. Thenard. Since this pigment does not occur naturally, it must have been synthetically produced by the early Egyptians. It appears quite frequently in many different sources in early Egypt. The Egyptians could have obtained the pigment through a precipitation from a hydrous solution of alum and a soluble cobalt compound with ammonium or sodium carbonate as precipitants. After a reaction, the pigment would have been filtered out from the solution, heated to 800-1000° C in order to be transformed into the spinel structure. This is a curious and a very complicated procedure for the period.

While there was no blue pigment used on the coffin of Paseshes, it is worthwhile to note one of early Egypt's more curious, unexplained scientific works. How and why the early Egyptians developed cobalt blue is unknown, but there can be no denying the fact that they did possess it and use it frequently several thousand years before it was re-discovered by Thenard.

THE TREATMENT

Initially, nine microscopic samples were taken from the following areas for examination:

1 Black on PR Eye	41 microns
2 Black on Neck PL Side with w/Fill	170 microns
3 Yellow Stripe on PL Shoulder	96 microns
4 Red From Ra on Maat	56 microns
5 White Flower Upper Chest PR Side	164 microns
6 Green Face PL Cheek	40 microns

7 White Stripe PR Hieroglyphic Separator	85 microns
8 Maat Feather PR Side	96 microns
9 Anubus PL Foot	88 microns

The samples were examined under visible and ultra-violet light using a Nikon Alphahot 2 light microscope at 40X, 100X, 200X, and 400X magnifications. The samples were cast in small cubes of polyester resin (Excell Technologies, Inc., Enfield, CT., USA) using methyl ethyl ketone peroxide as a hardener. The samples were barrier coated in Rhoplex AC33 using fumed silica as a thickener, to reduce infiltration of polyester into the sample. The samples were then cured at room temperature for 24 hours, ground and polished using Micro-Mesh abrasives to 12,000 grit. The samples were also stained with a variety of standard biological stains to allow identification of any binding media present. Microchemical testing was also done to determine solubility parameters and to assist in developing a cleaning plan for the coffin.

After examination, it became apparent the coffin had been made from a single log of cedar (possibly from Lebanon), cut in half and the respective sides hollowed out. The log was not full enough to fill out the proposed form of the coffin. Four additional pieces were added (one on each shoulder) to complete the upper body form. One was added to the PL corner of the base and one piece added to complete the beard. These additional pieces were also of cedar and held in place by randomly drilled dowels of sycamore placed at odd angles. To complete the form, a fill composed mostly of fine sand and resin was used to fill and smooth the joint areas followed by paint. When new, the coffin would have been very smooth and extremely glossy, completely hiding the added wood and joints.

STRUCTURE

After careful examination of the shoulder structure, it became clear that the shoulders were very stable despite the loss of considerable fill. The cracks at the joins of the four pieces comprising

the shoulders were stable in place and the numerous pins securing the areas were still very much intact. Other areas of the coffin revealed that the joints were somewhat less than perfect and that a very fine fill was used in conjunction with some form of plant resin and paint to smooth the irregular surfaces. There is slight movement of the four shoulder pieces when moved and this may have caused most of the considerable cracks to become once again visible after years of handling. The fill, before being treated in these joined areas, was very fragile and prone to just falling into grains of what appeared to be sand. Searches are still underway to determine if any adhesive was used on this type of coffin, but at the time of this writing, no obvious adhesive such as hide glue can be found. The main bonding for the additional pieces appears to be only the random pins at all angles mechanically holding the shoulder structure together. At present, it is still a very strong bond or join, and required no intervention. All the pins that could be identified were made of sycamore. Some deformation has occurred over the years to the added pieces on the shoulders, but the only way to make the added wood line up would require the area to be filled and painted as the Egyptians did originally.

Three of the four sycamore dowels that secured the PL corner of the base on the coffin were broken. At one point, someone had secured the loose corner with two wire nails. These nails were removed and replacement dowels were hand-cut to roughly match the original broken and lost pieces. Once the dowels were added, the base corner of the coffin was again secure. Examination revealed residue of the same type of fill found on the shoulder. Apparently this section of the foot, having undergone treatment in the past, had lost almost all of its original fill material. No attempt was made to re-fill the gaps created by the lost fill.

SURFACE

The raw surface of the coffin, while exhibiting wear, was already deemed in good to excellent condition and was only surface vacuumed to remove loose surface dirt. On the inside of the bottom portion of the coffin, several layers of wrapping were still

present just below the waist area. These appeared to be very firmly attached to the case. Apparently the body was not as perfectly sealed as one would be led to believe. Tests with Luminol confirmed a blood component. Testing for a gum residue in or on the linen wrapping also produced a positive response. There was also an area of seepage in the head area that produced similar results as the lower area.

COATINGS

The numerous areas of the bituminous coatings that were tented and/or loose were, after examination, clearly the result of seasonal expansion and contraction, resulting in the failure of the previously-mentioned fine sand fill used to smooth and fill much of the coffin. In areas of high movement, the fill had failed to hold and had become very loose. Even with the over-coating of the black paint, the fill was still unstable in many areas. Fifteen "Torpac" #13 100% gelatin capsules were dissolved in 100 ml of distilled water and carefully injected into the loose sand as a consolidant. The thin mixture went into the fill and hardened nicely without a trace of a tide line or additional gloss. All areas of the coffin with fragile or loose fill were treated in this same manner. The coatings were very stable and sound and should present no problem with reasonable handling and proper housekeeping. No attempt was made to fill any voids of lost coatings. The only modern material added was the gelatin. No barrier coating or wax was applied. The coatings, at this point, still retained a haze of surface dirt. After considerable micro-chemical testing, a water-based enzyme cleaning system was chosen as most effective and safest to use on the very fragile coatings of the black bituminous paint. The haze cleaned very nicely and the surface again returned to a deep brownish black. The areas on the black still retained the original high gloss. Areas of yellow and white, previously thought to have had early re-paints or touch-ups proved actually to be fairly recent attempts

at cleaning of the original surfaces. The whites and yellows of the coffin were soluble in water and almost all other solvents to one degree or another. These areas, under both long and short wave UV, showed no re-touching whatsoever. After cleaning, the black showed such an improvement in color and saturation, that no further cleaning was done in the very fragile areas of the glyphs and trim. The green tented areas of the face were injected with the previously-mentioned gelatin and with very mild heat from a lamp were relaxed back into place. As a result of microscopic testing, a plant resin varnish was found to still be in place over the green coating on the face. The green appears to have reacted with the base gesso over the years, giving the appearance of thin paint. The plant resin coating is still in wonderful condition and



Figure 3



Figure 4
 was left in place. No attempt was made to replace any of the lost gesso or green on the face. An oil residue, very possibly the remains of holy oil or some applied oils at the time of burial was found on the PL side of the face running down the side of the coffin. This is almost surely funeral remains and should be left in place. Also remaining was a single, very coarse brush hair on the PR side of the head piece. The brush hair remained in place after treatment.

While cleaning on the PL side of the head and shoulder area, the enzyme cleaning solution,



Figure 5

which was water-based, released some type of fragrance that lasted only a few seconds at most, but was most pleasing. It was very possibly something also water-based left over from the funeral rites that reacted with the water in the cleaning solution. Whatever it was, no trace could be found of any residue that might identify it.

The Coffin of Paseshes is currently on public display in Little Rock, AR at the Arkansas Museum of Science and History.

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