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THE SYMBOLISM OF MUD IN ANCIENT EGYPT

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Abstract:
Egypt was an agricultural society, soil and fertility were the secrets of the ancient Egyptian's life, so mud was a highly important role in ancient Egypt. Mud was the symbol of origin and fertility, and it was the cause of life. Mud connected with the creation and existence of the human being in ancient Egyptian thought, the ancient Egyptian realized that his earlier creation was from nature, and he considered himself as the son of the earth. The real importance of mud cleared in Egypt since prehistoric times, its world, religious, and funerary role was highlighted by the time, the ancient Egyptian used mud to set up worldly buildings and making pottery. Mud also had a curative property, it used as prescriptions of some injuries or splinting fractures as natural bandages. Its funerary role is shown in the burial customs in several tombs during the pre-dynastic period, Mud was sometimes poured into the tombs after burial as a desire for resurrection in the other world or a form of maintaining the body and the funerary offerings. Furthermore, it was occasionally used in mummification. Mud had very important magic and religious role in ancient Egypt, it was used in making vow offerings and funerary goods such as clay hairballs, clay trays, votive statues, soul houses, and clay face masks. So, it is important to highlight mud and its uses to show its worldly importance, as well as its religious and funerary significance to clear the purpose of using it in ancient Egypt.

1. Introduction

The Nile valley and Delta were the most proper places for the earliest settlement of the ancient Egyptians, especially after the drought, which formed a natural fortress of a vast desert along the banks of the Nile River. The ancient Egyptians realized the significance of mud as the essential element in the surrounding environment and used it in many industries for worldly, religious, and funerary purposes. The daily life's role of mud in ancient Egypt has been illustrated since prehistoric times, as the ancient Egyptians built their building and made their pottery of mud [1]. They also knew the mud therapy. They used mud to cure the skin, stomach, and intestinal ailments. They also utilized mud for cosmetic purposes [2]. Regarding its funerary role, the ancient Egyptians used mud for burial customs, as found in many tombs of the Predynastic and Early dynastic periods. They sometimes poured mud into the tombs after the burial of the deceased [3] for resurrection and rebirth in the Other World. They might do so to preserve the deceased's body and funeral offerings inside the tomb [3], unlike the occasional use of mud for mummification [4]. Mud also had religious

significance in ancient Egypt. It was often used in making some votive offerings, such as mud hairballs [5], clay trays [6], soul houses [7], clay face masks [8], and clay coffins [9].

2. The Importance of Mud in the Daily Life

The ancient Egyptians used to take advantage of everything in the surrounding environment. They believed that people were created of mud. Thus, they used mud to make pottery, votive offerings, stoves, ovens, molds of mud brick, and other worldly uses [10].

2.1. *Using mud for building houses*

The ancient Egyptians used mud to make bricks. Mud was the best building material because of its architectural characteristics and was the most common raw material in building, especially in civil institutions [11]. The ancient Egyptians used mud for making mud brick by mixing mud, sand, and straw. After that, they formed mud brick as units using rectangular molds and left to dry in the sun. Mud brick was not limited to establishing civil institutions [12]. Still, it was also used in funerary and religious institutions, e.g., temples and divine chapels, especially in Prehistoric Egypt and Pre-dynastic periods [11], as shown in the excavations of Hierakonpolis and Shunet El Zebib in Abydos and the inscriptions of many artifacts. The traditions of manufacturing and building uses of mud brick were stable throughout ancient Egypt. Archaeological evidence shows mud's making traditions, which remained the same from time immemorial to the present Era, as found in some current Egyptian villages [11].

2.2. *Mud and making pottery*

The ancient Egyptians were aware of the methods of forming and making pottery [1] in the Neolithic period. They used mud to make poetry with excellent skills, as pottery required many stages of preparation and treatment before fabrication [13]. First, they brought mud from the places where the sediments of the Nile flood were deposited to the manufacturing plant using animals, especially donkeys. When arriving at the workshop, mud was cohesive solid masses, and craftsmen dismantled these masses by foot or made animals walk on them [14]. After that, they removed unwanted objects, including gravel and impurities, that might cause defects while manufacturing [15]. Then, craftsmen added the water in specific proportions to make a paste. Some additions, such as straw, animal manure, plant fibers, or hay, enhanced strength, helping the heat penetrate the mud during burning without causing cracks [16]. There were other mud uses in ancient Egypt, such as daily tools, including bread molds. The ancient Egyptian used to pour the dough inside mud molds to make large amounts of bread. Later, they used this method to produce other artistic forms by casting made in different molds [16].

2.3. *Using mud as a physical therapy*

The ancient Egyptians paid special attention to physical therapy and knew its therapeutic benefits over five thousand years ago. They used it as a natural treatment [17] and as a cosmetic material. They also used it in medicine and physiotherapy for some medicinal recipes. They used mud as physical therapy, such as a treatment for bone fractures. They used to wrap the broken part with pieces of cloth after mixing it with mud instead of the gypsum known today [18]. Rheumatic diseases were among the most famous diseases treated in the Roman hospital by mud baths. Recently, it has been proven that using mud in physiotherapy has a profound effect on treating rheumatic diseases [19]. Modern science has paid attention to using mud as physical therapy, especially for its profound effects in treating rheumatic diseases, as it increases the muscular strength of the bones, especially in the feet and legs. It increases body temperature, improves blood circulation,

and increases pulse speed, relaxing muscles and revitalizing the body. Mud has many healing properties as it has many antibiotics suitable for treating external wounds, such as the prevention of some epidemics and as a natural treatment for diseases of the nervous system and defects of moving organs [20]. In contrast, dust is a kind of purification. For example, rubbing an unclean shoe on the ground is enough to remove the trace of impurity. It is worth noting that mud was one of the most prominent cosmetic recipes for Queen Cleopatra, as shown by her famous bath in Marsa Matruh [18].

2.4. *Mud and birthing chair*

The birthing chair in ancient Egyptian took the form of the letter "U". At birth, the pregnant woman kneeled and sat down on her heels while putting two mud bricks under her knees until delivery. A woman supported her back, and another was in front of her to receive the newborn baby. This scene depicted the goddesses of birth and motherhood and their role at birth [21]. "Meshkent" connected with childbirth in ancient Egypt and supervised childbirth with “Hathor”- the goddess of motherhood- and "Taweret" (a female hippopotamus). According to the Egyptians' beliefs, she was associated with some manifestations of their private life as the goddess of destiny and luck. She was also responsible for determining the destiny of newborn babies [12] because she was depicted as a birth-brick. “Meskhenet” was sometimes depicted as a woman with a rectangular mud brick over her head as a sign to the birthing chair. Moreover, the ancient Egyptians considered mud brick a sacred material ind-icating childbirth [22] and a magical protective quality that the mother benefits from during delivery [21]. The funerary collection of king Senusret III found to the south of Abydos contained a mud brick with colorful decorations dating back to the Middle kingdom, depicting the childbirth scene. At the base, a mother was depicted surrounded by two women and holding a baby. The entire scene is surro-unded by divine symbols representing the head of the goddess “Hathor” and models of animal bodies as symbols protecting the Sun-God “Ra” during its daily birth in the east. That is, mud was related to delivery and resurrection [11].

3. Mud and its Religious Significance

Mud had worldly and religious significances [23]. It was considered as a "sacred material" with religious importance. Thus, its use sometimes had ideological symbolism. This section overviews some of the mud’s religious uses.

3.1. *Mud and performing the sacred borders*

As mentioned above, mud was one of the most important materials in construction, especially in worldly buildings and defensive walls. Over time, the actual use of mud as an architectural material had ideological significance. Mud brick became important for various religious purposes [11], and the ancient Egyptians used it as a sacred material and a major ideological sign, especially in the religious and funerary establishments [12]. Thus, they were keen on building a mudbrick wall around the holy temples because they were often considered sacred. This mud brick wall represented borders that protected chaos symbolically. Temples with their mud brick walls were anti-chaos fortresses [12]. Ancient Egyptians thought that every temple was standing on a primitive hill out of the water of primeval ocean "Nun". The mud brick enclosure with its internal and external parts resulting from the concave and convex bricks was closer to the shape of water ripples as if representing the water of Nun. In addition, mud brick was a fundamental element in construction because it was easily fabricated and creatively used. It protected and defined the borders of the temple as a form of fortification, as well as real and symbolic protection. It almost continued till the late New kingdom [12].

3.2. *Mud and its association with the gods*

3.2.1. The connection between mud and Khnum

In ancient Egypt, mud was connected with "Khnum" and human creation. "Khnum" was one of the most important gods of agriculture [24], was responsible for the first cataract at Aswan, and controlled the origins of the Nile and floods from the caves there. Thus, "Khnum" was associated with the Nile and fertile mud. It was depicted as a potter who formed all creatures on his wheel [25]. "Khnum" was worshiped as a ram because of his fertility and production ability. Later, he took the form of the creator. Accordingly, "Khnum" was considered the creator god who created all people by the potter's wheel. Creating man from the mud was one of the most common issues between ancient Egyptian thought and the sacred books, especially the Holy Qur'an, because of the phases of man's creation [26]. The first phase was creating the man of mud. Scientific research has recently proven that soil is one of the most important elements of the human body and living organisms, as shown in the theory of the four elements of matter (water, soil, fire, and air) [26], which demonstrated that the human body consists of twenty-two elements of soil composition [20]. Soil is the land surface that suits plants because mud is dust mixed with water even when removing water humidity.

3.2.2. The connection between mud and Heqet

The ancient Egyptians connected mud with some creatures living in the mudslide and famous for increased fertility, especially the frog that gave the best example of spontaneous reproduction and residing in the mudslide. This concept emerged because of the number of young frogs that appeared heavily in the mudslide annually after receding the water flood [27]. The ancient Egyptians noticed that the frogs never ate during hibernation as if they were dead and reactivated in the spring. Thus, they considered the frog a symbol of resurrection [27]. The frog appeared accompanying the god of the Nile "Hapi" in some formations and artworks to ensure the meaning of fertility. This relationship could be interpreted based on the connection between water and mud in the surrounding environment and announcing flood and water. Accordingly, the frog was considered the deity "Heqet" that talked about coming to the rain or flood and promised a new life in Egypt. "Heqet", as a goddess of birth in ancient Egypt, was presented as a frog or a woman with the head of a frog holding "Ankh"- the symbol of life- to give life to the newborn baby. The oldest sign of its relationship to childbirth dates to the Middle kingdom, as shown in the Westcar Papyrus, where the goddess promised the birth of the first three kings of the 5th dynasty. Since then, the "maid of Heqet" title indicated the midwife in ancient Egypt [25]. Furthermore, "Heqet" was depicted as a frog on many amulets [27]. The frog was often mummified and kept with the dead as magic amulets to ensure rebirth [28]. It usually took a semi-human form in the temples. Therefore, mud was connected with creation myths in ancient Egypt. Moreover, stone and pottery frog-like amulets and statues were often found, such as the models kept at the Egyptian Agricultural Museum, Dokki, Egypt [25], containing many amulets and statues in the form of a frog. Some of them were made of stone and others of pottery [27], fig. (1).

Figure (1) Shows a frog statue in the Agricultural Museum in Dokki, dating back to nearly the Middle kingdom (*After, Aman, 2011*)

3.2.3. The connection between mud and Osiris

The life of the ancient Egyptians was religion-centered because religion was the drive of all life affairs and the cause for life. Egypt was an agricultural society that relied on mud as a source of growth and fertility. It adopted the doctrine of “Osiris” that took mud as a symbol of the god “Osiris” [29]. Thus, “Osiris” was one of the most popular gods in ancient Egypt [14], as he was the better of resurrection sought by all people, and his worship was a part of the religious and funerary rites. Consequently, the ancient Egyptians made many small vow statues of mud or pottery and sold them to the people who could afford them in temples, big worship statues. They also made ritual statues, such as the Osiris corn mummy used and carried during religious celebrations and festivals, and ceremonial statues, including the "Osiris corn mummy" [30]. *Osiris corn mummy*; the ancient Egyptians were keen on putting Osiris statues and miniature models of Osiris mummies in their tombs. Many of such fake Osiris mummies were called "corn mummies", "Osiris mummies", or "corn statues". They were a kind of small mummies made of a mixture of mud or sand with pills and wrapped in linen bandages like coffins. Then, they were saturated until the corn or wheat grew to ensure the renewal of nature and resurrection in the Other World. One model of the fake Osiris mummies is the corn mummy No. (IL.2004.13) exhibited in a room at the Walters Art Museum, Baltimore, USA, as a gift to the museum in a private collection. Neither its origin nor the place of excavation is known. Moreover, it is difficult to date this mummy accurately because of the lack of information on its origin [31], fig. (2). Similarly, other small wooden Osiris coffins were found to play the same functional role. The National Museum of Ancient Egyptian Art in Munich, Germany, contains a miniature Osiris wooden and polished coffin numbered ÄS 0310 that took the form of an Osiris mummy. It measures 55.3 cm high and 15 cm wide. While the cover measures 8.5 cm deep, the box measures 9 cm deep. The base and cover of the coffin are pierced at the ankle level. There is a third hole above the head of Osiris. The holes in both sides might be used to fix the cover of the coffin [32]. Regarding the function or role of this coffin, Veiga reported that the coffin might be used to keep the mummy entitled "Osiris corn mummy" that was introduced in the Middle kingdom, made of barley and clay mixed with hay and saturated from the Sacred Lake in Dandara. The corn mummies were made annually and used in the ritual celebrations of Osiris festivals. The new mummies replaced the old ones of the last years. These mummies measured 35-50 cm wide and 28 cm long. They were put in hawk-headed coffins in the tombs, whereas miniature models were kept in coffins with the head of “Ptah-Sokar- Osiris” in the late period of ancient Egypt. According to the Osiris doctrine, these mummies represented the god Osiris, symbolizing fertility in ancient Egypt. Supposedly, they provided continuous land prosperity in the cultivation of various crops [32]. The perspective of Veiga contained religious philosophy about the coffin of Munich because he argued that it resembled a ship or floating coffin to transport the corpus of Osiris during the travel in the Mediterranean Sea after being killed by his brother Set. After arriving on the shores of Byblos, the coffin turned into a "wild" or small tree, repeating the idea that every dead becomes Osiris [32]. Several Osiris coffins were found in many royal tombs, including the tomb of Tutankhamun [33], and used as "amulets" for protecting the burial chambers [34]. In the New kingdom, "Osiris beds" were made of mud and grain with a recessed image of Osiris. After planting the grains, they

grew when watered and exposed to the sun's rays [35]. Only a few examples are known, such as the one found in the tomb of Tutankhamun (KV62) measuring 190 cm and numbered (JE 62702) in the Egyptian Museum [32]. Veiga argues that Osiris beds show the surrender of Osiris for death before the new seasonal birth as a ruler to support the place of the god/king, who resembles the natural life cycle when the grains restore life and fertility after burial and irrigation [32]. Hence, mud connected Osiris and immortality. It was associated with many agricultural gods in ancient Egypt, confirming its secular and religious role in the ancient Egyptians life [33].

Figure (2) Shows the mummy of the Osirian corn inside a coffin (*After, Schulz, 2005*)

3.2.4. Mud, protection symbols, and devotional vows

The ancient Egyptians could make many protection symbols from mud, such as "the four snakes" that were put in the corners of the bedroom to show the four directions and protect the sleeper from evil spirits, resembling the role of the cobra in protecting the solar boats during their trip to the underworld [36]. They were also interested in wearing and maintaining amulets. Most people who could not afford expensive jewels and amulets of faience used necklaces resembling turquoise or glazed ceramic because it was important to have such things in this world and the hereafter [37]. In the ancient Egyptian religion, even the junior employee should have necklaces, amulets, and scarabs, as magical symbols that helped in resurrection and protection in the hereafter and worked well [16]. Therefore, they were provided adequately. They pasted, cast, pressed, and left mud for a while to cohere, then removed it. Then, mud was put in the oven for glazing. Sometimes, the blue color was obtained from cobalt or others. After that, it was burnt to fix the color [15]. Some pieces of evidence were found in Amarna, showing that coloring took place in the same place. These amulets worked well for the common people [16], who were keen on presenting votive statues and offerings to the gods in the temples. Mud was the common and cheap material for these people. Furthermore, the ancient Egyptian artist invented molds to reproduce more votive statues with minimal effort. First, the artist carved the piece well and covered it with mud paste to reproduce all the details of the carved piece. Then, he left it in the sun to dry and cohere and removed it from the mud mold. After that, he burned it in the oven for glazing and having an internally emptied pottery mold that was ready for casting. Sometimes, he used two molds of open pottery for one piece. The paste was cast in each mold. Then, they were attached to form a complete figure. This method was used for complete or big statues [16]. Mud clones were often cast [38], as shown in some archaeological areas where many statues and pottery molds were found [15]. Furthermore, several mud statues, such as the Ushabti figures [14], were mostly made using casting molds [38] because mud was easily cast in them [16]. Mud was cheap, easily obtained, and suitable for the middle class. However, the upper class and kings used it to make statues as a material with a fair economic value, such as the royal statues discovered in the temples of Abydos and Hierakonpolis that were carved from ivory or terracotta (baked mud) and kept in many museums. These statues were considered sacred or vow statues because of their size, place of dis-

covery, and humble general appearance. This finding suggests the religious use of the statues as deities in the temples, dating back to the early dynasty [39]. Interest in making mud statutes continued at least to the New kingdom.

4. Mud and Funeral Customs

4.1. *Pouring mud in the tombs*

Archaeological discoveries in many tombs proved that the ancient Egyptians were often keen on pouring mud inside or above the tombs. The Cemetery of Tell el-Farkha was one of the most important cemeteries that maintained the burial manifestations and features. Many of its tombs contained distinctive elements, such as ochre, pure "sacred" sand, and liquid mud [3]. These traces signified the nature of the adopted funerary customs because they were found in the burial rooms in some tombs of the Protodynastic period [3]. Mud covered all corpora, and there was a fine layer of pure sand followed by another layer of ochre. Then, the ancient Egyptians added personal or funerary offerings. Finally, they poured the liquid mud on the top or above the tomb [3]. In other tombs, there was a layer of liquid mud at the bottom of the burial rooms. The ancient Egyptians might use that liquid mud in the tombs of the rich. Hence, they poured the mud over the body and funerary offerings of the deceased to cover them completely. This custom dates back to the tombs of the first group of the necropolis of Tell el-Farkha. It was found in tombs No. (24, 98, 99, 100, 114), fig. (3). The purpose of pouring liquid mud might be to prevent tomb robbers from stealing its contents. However, it is striking that some tombs were found with poured liquid mud without funeral belongings. In other tombs, liquid mud was found in pots, whether pottery or stone vessels, as a kind of offering. For instance, tomb No. 91 contained a spoon of bone soaked in liquid mud placed inside a cylindrical stone vessel, resulting in linking mud with fertility symbols, resurrection, and rebirth [3].

Figure (3) Shows tomb No. 100, Tell el-Farkha (*After, Dębowska-Ludwin, 2012*)

4.2. *Mud and mummification*

The ancient Egyptians resorted to embalming the corpus of the deceased in preparation for the arrival of the soul in the Other World. They wanted to get an ideal image of the deceased. Then, they focused on the materials used in the mummification process [4]. They were interested in making the body as complete as possible. They could do this by stuffing the body with sawdust, flax, butter, and mud [40]. Despite the interest in embalming the body and caring for it, skin shrinkage and distortion often occurred in some mummies. Thus, they needed to resort to applying new "cosmetic" mummification techniques because they noticed the different features of the deceased's face after mummification, as the mummies seemed withered and weak. Then, they used a filler to fill the body with different materials, including sand, linen, sawdust mixed with a fatty substance, e.g., butter or grease, and mud. These materials were used to fill the face and body areas to make the mummy a living person [41]. The embalmer filled the soft parts of the body with linen dipped in resin, mud, and other materials and sometimes filled the space under the skin with mud. He separated the skin from the tissues and lined channels by expanding his hand to fill it with mud or sand and other materials to restore the body's natural shape [42].

After emptying the internal viscera, the embalmer filled the body with strips of linen, sand, or mud and sometimes with mud and flax with a resinous substance used in embalming the mummy [42], fig. (4). Evidence of cracks under the skin for packing has been confirmed in some royal mummies dating back to the 18th and 20th dynasties, as shown by the detection and analysis of thirteen royal mummies dating back to the New kingdom. The X-Rays and CT scans proved that the filling process was done while the skin was relatively soft before drying [43].

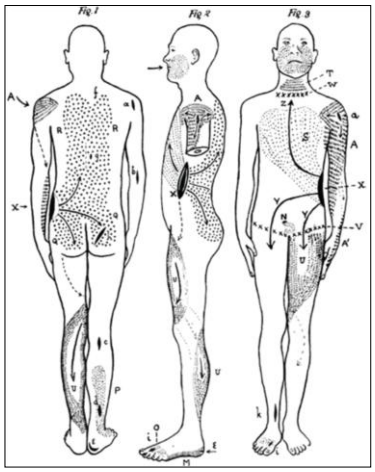

Figure (4) Shows a schematic diagram showing the locations of the incision used under the skin (*After, Tristant & Ryan, 2017*)

4.3. *Mud face masks*

Funeral face masks had multiple purposes. They not only protected the head of the deceased from separation from the body but also gave an aesthetic character to the mummy and mimicked the attributes and qualities of the Egyptian gods [44]. The ancient Egyptians were afraid of losing the head of the deceased, so they tended to pay attention to putting masks, designing alternative heads, and performing the rituals of opening the mouth to make sure that the deceased would continue to do one's work normally, such as eating and breathing, to continue in the underworld [4]. They used mud masks to serve this belief by placing the mask on the deceased face, and the musk would guide the soul to the deceased. Masks were one of the most important means of commemorating the deceased [16]. The ancient Egyptian artists knew and used the casting molds to make several masks' models. They made these masks by making a direct mold of plaster or mud on a person's face; they poured the mud into this mold to make masks and give natural features that matched the owner of the mask [45]. Models of plaster casting masks were found in Amarna in the workshops of some artists who might make these molds during the lifetime of their owners to match them directly with their faces [23]. Masks evolved from face masks to semi-body masks, representing the face and chest. The artists placed the masks on top of the mummies inside the coffins after burning them in ovens to dry before placing them on the faces [46]. The manufacturing and general shape of such mud masks suggested speed and local industry characteristics, indicating that these masks were for immediate burial [47], unlike the luxurious traditional coffins, which were sometimes brought before the burial [47]. Mud face masks were classified into two types: The "natural" with consistent features and quality of artistry [8] and the "abnormal or dissonant" marked by the strangeness of the style and caricature features and devoid of idealism and consistency between the features of the face as if they were not form mud, but only pressed it, so the masks were of poor artistic quality [48]. Hence, the purpose of such mud masks was the desire for resurrection, considering that mud was one of the sacred materials associated with renewal and resurrection [48].

4.4. *Mud coffins*

The ancient Egyptians depended on several things to confirm their presence in the Other World, such as the mummification of the deceased and the use of coffins and masks to keep the entire body. Wood and mud were among the most common materials

used for this aim [49]. Mud, in particular, had a prominent role because of its cheapness compared with stones and wood and its abundance in the environment. It was suitable for the middle and poor classes [47]. Mud or pottery sarcophagi were known since the Pre-dynastic period [9], as the deceased was sometimes placed in a pottery container. Several pottery coffins were found in the Cemetery of Tel Hassan Daoud in Ismailia, dating back to the early dynasties [50]. Mud coffins were used in ancient Egypt from the Pre-dynastic Era to the Greek and Roman Era. Masks were found on large digs at several sites dating to different periods, through which it was found that mud coffins in their burials. Mud coffins began very simple with an oval or rectangular shape and evolved in the New kingdom when mud coffins with human bodies appeared. In addition to several other mud coffins, some were tube-like or cylindrical, with false beards [8]. With wooden coffins, the ancient Egyptians did not abandon using mud [51].

5. Mud and Funeral Offerings

Many funerary items made of mud were found in the tomb, either in the burial chamber or corners, including mud trays, soul houses, mud hairballs, mud cones, and magic bricks.

5.1. *Mud trays and burial practices*

Mud trays were among the remarkable funerary items found in several tombs. For example, in Cache No. KV 63 in the Valley of the Kings, several rectangular mud trays were found. They were small, shallow, low-edged, and made of raw mud. Different types of mud were used in making them, as shown by the diversity of colors. The trays were characterized by their small size. They were 17 to 13 cm long, 5.5 to 8.5 cm wide, and 1.5 cm deep. They were found in twenty-eight huge pottery jars resembling "Zir". Some trays were broken, others were dented, and a few of them were intact [6]. Although it was not possible to know the purpose of these mud trays, Ikram tried to obtain some information about them, concluding that these trays were manufactured on-site and were used within three hours of their manufacture as they dried quickly even in cold weather. Moreover, the dent and the smashing might be intentional in it or might happen as a result of throwing them without care after use. For instance, it was found that the cache trays KV 63 were placed within vessels and some embalming materials. Ikram assumed that these trays played a role in mummification rituals or had a practical role in the embalming process itself. These trays might be used in funerary rites and might contain some elements (such as natron salt, incense, foodstuffs, and ornamental items) used during the ritual of opening the mouth [6], fig. (5). No funerary text explains the purpose of such mud trays. Although there are similar ones in the tomb of Horemheb, it is unlikely that they have anything to do with the funerary furniture dedicated to the tomb and immortality and may give yellow and white residues on some trays in a cache KV 63 evidence of its original contents (ocher, natron, or ornamental materials). However, this is not conclusive evidence, as these residues may have come from mixing with other materials placed inside the jars and not from the residues of use [6]. Some have thought that these trays may be used for seed germination, such as the Osiris family [35]. However, the original contents of the trays were almost dry and not wet (such as spice powder, ocher, etc.), contradicting the hypothesis that these trays represented fields or were used for seed germination, as there is no sign of the grains. Rather, the only organic matter sticking to them came from the jar's storage [6]. Unfortunately, the number of trays in the tomb is not precisely known, which does not give any idea of the functions of these ritual trays. No evi-

dence is also known about the role of these trays in funerary practices. The changing dimensions of the trays suggested more than one hand in making them - perhaps four or five people, and these hands were identified by tracing the repeated patterns in those mud trays. The huge amount trays that had to be produced and used in a short time ranging (two and three hours) might also support the idea that there were many makers of those trays. Moreover, those makers did not need any special training to make such trays because once they started manufacturing one person could produce at least eight or ten trays in one hour [6]. It is noticeable that although many trays were broken or crushed, many of them were not. It does not seem that they were broken in a deliberate ritual way, but once their purpose was fulfilled, they were thrown aside but with care because they were tools associated with sacred rituals and must be preserved [6]. A group of those trays was found in the tomb of Horemheb, but some of them were treated so badly that many of them were completely damaged, and a few of them remained unbroken [6].

Figure (5) Shows a dented clay tray found in tomb No. KV63 (*After, Ikram, 2010*)

5.2. *Soul houses*

Soul houses were miniature models of houses of pottery (burned mud). They were often simple and free of inscriptions. They were placed above or inside the tomb to serve the soul of the deceased through a set of rituals performed on them, causing eternal life for the deceased in the Other World. In the tombs of the late Old kingdom until the 13th dynasty [7], there was a group of these mud models of houses known as 'houses of the soul'. They spread specifically in the period between the 6th and 12th dynasties. Those houses were placed in the upper part of the tomb to help the spirits eat the funeral offerings placed in front of them [52]. The soul houses were found in Middle and Upper Egypt, Lower Nubia, and the Oases [53]. They preserved the most important features and details of real dwellings, such as the entrance, courtyard, storeroom, stove, staircase, and bedrooms to give us a picture of the architectural features of the ancient Egyptian dwellings during that period [53], fig. (6). Some soul houses were well-made, while others were poorly made. Due to the artist who made them, the social level of their owners, and the time of manufacturing, the soul houses had their function and were not a substitute for stone offering tables, as they were found in the tombs because of the hand with these models [53]. In sum, mud was connected with the soul and resurrection, whether by pouring it inside the tomb itself, as a material for embalming, or in the manufacture of many types of funerary offerings for the deceased, as in the case of "the soul houses."

Figure (6) Shows a model of a soul house dating back to 2100 BC - Royal Ontario Museum, Canada (*After, Hassaan, 2017*)

5.3. *Presentation of mud hairballs*

The custom of offering clay hairballs was known in the Old kingdom, as forty mud balls were found on a small bench in tomb D in Abydos dating to the Era of the 4th dynasty. Most of those mud balls were

placed in the northeastern corner of the mastaba. The diameters of three of the forty balls ranged 20-40 mm, and one of them contained parts of the papyrus plant, while the others were on pieces of linen. All but one of these balls were stamped with the word *ḥtm* [5], which might indicate that these balls were a contract confirming the correctness and completeness of the burial rituals correctly [5]. Several hairballs of mud were found in Abydos in a small gap at the top of terrace No. 50, near its northwest corner. Animal inscriptions were found on these mud balls, which generally resembled the mud balls [5]. Many mud hairballs were found in some tombs of the New kingdom. In Lahun, some balls were found in a tomb dating back to the 20th dynasty and were about 30 mm in diameter. When the Manchester Museum opened the tomb, the hairballs were contained tufts of human hair almost brown belonging to a child. The balls themselves were made of Nile silt mixed with bits of seashell, and dried in the sun. On the outside of one of these balls, a piece of linen is still attached, indicating the material in which the balls were wrapped [5]. In the workers' village in Amarna, several mud hairballs were found, and some of them were stamped with the impressions of some seals. It is not known whether these balls were found in booths for home worship or from another place in the village [5]. The custom of presenting clay hairballs continued until the late Greek and Roman Era [5], and the presentation was initially associated with funerary purposes. Then, the matter turned mostly for magical ideological purposes [5].

5.4. *Mud funerary cones*

Mud cones were funerary items made of mud mixed with straw and small amounts of sand. Then, they were left in the air to dry. After that, they were stacked on top of each other to burn. Funerary cones varied in shapes and sizes; cylindrical, wedge-shaped, rectangle, and square [54]. The lengths of these mud cones were 10-15 cm and ended with a pointed top to be placed in rows above the entrance of many tombs in Thebes Cemetery. There was round, rectangular, or square base inscriptions in horizontal or vertical lines [55]. These cones date back to the 11th dynasty and were at that time large without engraved hieroglyphic writing on the base [55]. These funerary cones were primitively formed by hand. Thus, they contained fingerprints on the surface. Some large cones were broken because they were hollow from the inside or because the pointed part of the top was weak, such as the funerary cones preserved in the Petri Museum [56]. In the beginning, these cones were large and were not engraved with hieroglyphic writing on the base. They might be also be used as a decorative frieze above the entrance to the tomb [55]. Perhaps, the purpose of these funerary cones was to link the deceased to some gods, such as the gods "Amun, Osiris, and Anubis". Furthermore, the inscriptions showed keenness to combine their funerary and religious significance [55].

5.5. *Magic bricks*

For the ancient Egyptians, mud brick was not a raw construction material but had a symbolic meaning known as magic bricks, as well. The ancient Egyptians were keen to include four clay molds in the corners of the burial chamber, one for each main direction, as an important funerary element in the tomb [11]. The magic blocks were known in the early 6th dynasty. In the beginning, they might be connected with the rebirth and were seen during the births in which the role of the goddess Meshkent mentioned in the Westcar papyrus was explained [21]. These bricks were engraved with magical texts in Hieratic incantation No. 151 in the Book of the Dead. They were usually installed in carved recesses in the walls of the burial chamber [57], and each brick was provided with a hole for an amulet. In the western direction, the "grandfather" amulet was usually made of

blue or gold faience [58]. In the eastern direction, the brick mold was an amulet of the sleeping god "Anubis. The northern block contained an amulet of a small wooden statue resembling an ushabti. The southern direction included an amulet in the form of a vase with a wick inside, which was perhaps a torch or flame. Thus, the magical bricks with amulets were only a kind of funerary equipment with a magical doctrinal significance [11], fig. (7). Magical bricks were not for the kings only but were also for public people. Some of these bricks were found in the Abydos Cemetery where two magical bricks were found in the collection of the Oriental Institute Museum in Chicago under No. OIM 6330 and OIM 6401 [21]. They were found in Abydos associated with tomb D 57 and engraved amulet number 151 from the Book of the Dead. Mold OIM 6330 retained several indentations and fragments of mud, as the jackal amulet "Anubis Recumbent" was depicted. In the brick, the brick OIM 6401 had a gap to hold the *Djed* pillar amulet that has been missed. The most interesting thing is that the bricks were predominantly amber mixed with mud. It seems that the remnants of incense were added in pre-paring the bricks according to the instructions with amulet No. 151. The name mentioned on these mud molds belongs to the vizier Nespamedu from the 25th dynasty [21]. These mud molds were similar to the brick molds that women used to lean on during childbirth. The use of bricks in the context of funerary rituals is a figurative matter, through which the symbolic birth of the deceased is intended, as if it provides him with the tools and equipment which used in earthly birth, to make sure the rebirth of the deceased in the afterlife, just as bricks used in the "opening of the mouth" rituals, whether brick used in funeral rites or in temple founding ceremonies, in both roles the bricks had a symbolic meaning associated with rebirth, rebirth, and renewal [59], the burial chamber of king Tutankhamun is the only room in which four magical bricks were discovered untouched in their first condition, they were found in niches on the walls, however, three of them were not placed (on the eastern, western, and southern walls) as well, the three wine jars found in Tutankhamun's burial chamber placed on the eastern, western, and southern walls, contrary to the geographical orientation of the usual mud brick positions except for the magical "grandfather" brick in the south in the face of the special, which refers to the strengthening of the Osiris protection of the cemetery [60].

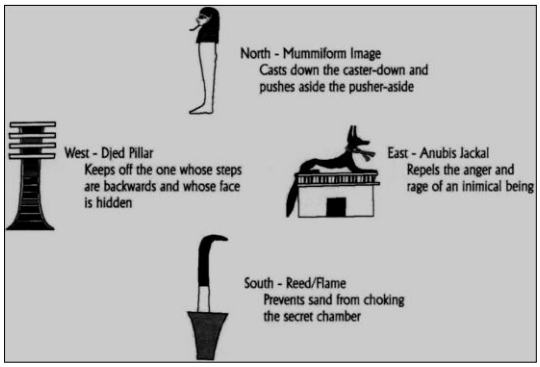

Figure (7) Shows diagram showing the protective functions associated with magic bricks in ch. 151 of the Book of the Dead (*After, Roth & Roehrig, 2002*).

6. Mud and Expressing Sadness

Mud was connected with some funerary customs in ancient Egypt. When someone died, the family would mourn for at least seventy days. When someone had to go out after that period, he would cover one's face with mud [61]. Mourning was often characterized by throwing ashes or dirt on the head and removing a lock of hair. This action might be a reference to the legend that Isis cut one of her braids as a symbol of her grief for Osiris [61]. Some of these matters have survived in some villages of Upper Egypt as an expression of grief. According to Gabra, Herodotus says: "the way of the Egyptians in mourning

and burial was as follows: when a person of an excellent position in the family dies, all the women of the family smear their hands and face with mud and they leave the homes, they slit their clothes and slap their cheeks, their relatives also go with them in this funeral journey, and likewise, the men used to slap their cheeks and their clothes" [62], Gabra referred also to what Diodorus mentioned about mummification: "when one of them dies, his relatives and friends put mud on their heads and go around the city morning until the time of burial, and at the same time they refrain from washing, and wines and all the pleasures of life, besides the sorrow, even new clothes they do not put on their bodies [62], perhaps all of these practices confirm that mud connected with the expression of sadness in ancient Egypt.

7. Results

Mud was associated with stability in ancient Egypt. It had its importance in daily life uses. It was considered a basic material for setting buildings and a suitable raw material for making pottery. It was used in manufacturing reproduction and bread molds and many household tools. Because religion is not isolated from life, the ideological importance of mud appeared. The ancient Egyptian linked it to the resurrection, fertility, renewal, growth, continuity, and some gods and deities, such as Osiris, Khnum, and Haqqat. Mud had its funerary importance in ancient Egypt. It was considered a symbol of sadness and was associated with burial customs, especially during the early dynastic times. Moreover, the ancient Egyptian made many types of funerary mud items and used mud in mummification.

8. Discussion

It is challenging to study all the life, funeral, and religious uses of mud in one paper. However, the present paper tried to clarify these aspects and refer the reader to other studies to learn more about the various mud industries in ancient Egypt. For example, Virginia discussed mud bricks [11], Nicholson explored making pottery [13], György identified the use of clay in treatment [17], and Scalf highlighted the magical clay bricks [21]. The religious significance of mud was also illustrated by Schulz, who mentioned the Osirian corn [31]. Many studies discussed the Egyptian deities and their relationship with mud. For instance, Dębowska-Ludwin explored pouring mud in the tombs [3] and the use of mud in embalming some types of funeral offerings. Ikram studied the mud trays and their funerary role [6]. Tassie explored offering hairballs [5]. Many other studies were about soul homes [53], clay masks [47], clay coffins [46], etc. Silverman examined magic mudbricks [57] and highlighted the relationship between mud and sadness in ancient Egypt.

9. Conclusion

The ancient Egyptians thought about using mud, especially after settling on the banks of the Nile. They realized that mud was the origin of fertility and growth. Therefore, they related mud to prosperity, rebirth, and renewal. They used mud as a structural element and created mud bricks. They made pottery and life tools and used them in many other industries by the time. Mud was a sacred material that the ancient Egyptians were keen to use symbolically when setting up their religious facilities. The mud bricks were connected with childbirth, and the building blocks were turned into a birth chair, as the original birthing chair was known in ancient Egypt. Mud had its ideological importance in ancient Egypt clarified through its connection to the process of human creation or its association with some symbols of protection in the thought of the ancient Egyptians. It was linked to several gods and deities in ancient Egypt, such as the god Khnum, who created creatures from clay on his wheel, and the goddess 'Meshkent', the goddess of childbirth, who took the mud brick as a symbol and the birth chair that bore her

name. Mud was connected with the goddess "Haqqat", who took the form of a frog or the human form of a female with a frog's head, grasping with both hands the significance of "ankh", the symbol of life- to give life to the newborn baby. She symbolically combined mud and birth, emphasizing its importance and ideological significance in ancient Egypt. Mud was also associated with the god Osiris; the ancient Egyptians were sometimes keen to place miniature models of Osiris mummies in the form of the false mummies that took the form of Osiris, known as the "corn mummy", "Osiris's mummy" or "Statue of Osiris grains", inside the tomb. These models were a mixture of mud or sand with seeds wrapped in linen bandages, similar to a shroud. They were moistened in a certain way until the grains sprouted and ensured the renewal of nature and rebirth in the afterlife. The ancient Egyptians relied on several things to confirm their presence in the Other World, including mummification of the body and the use of coffins and shrouds to keep the entire body. Mud was one of the most common materials used in this regard. Mud and pottery coffins were known in ancient Egypt in the Predynastic period. Coffins are the most important funerary element in the burial process because they contain the deceased's body. Clay coffins had a vital religious role in ancient Egypt. Many types of funerary items made of clay were found and kept inside tombs, such as clay trays, soul houses, clay hairballs, clay cones, and magic bricks. Mud bricks were not only raw construction material but also had symbolic objects that were known as magical bricks placed in the corners of the main burial chamber as an essential funerary element in the tomb. Mud trays used in acting the funeral rites might contain some elements (e.g., natron salt and incense) and other materials used during the opening of the mouth rituals. Soul houses had a religious and funerary significance. They were placed in different places inside tombs, for instance, at the top of the tomb (above the tomb's roof) instead of one of the tomb stones from the outside and inside the tomb facing the west. Mud was associated with expressions of sadness in ancient Egypt. This belief has survived in some villages of present-day Egypt.

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