

THE OSTRACON



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STUDY
SOCIETY

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CONSTRUCTION AND PLASTERING OF THE WOODEN COFFINS OF THE NON-ROYAL EGYPTIANS

By Jack Kullman

ABOUT THE AUTHOR: A native Coloradan, Jack Kullman is a retired architectural designer who has been a volunteer interpreter for both the Ramses and Aztec exhibits. He is currently working on the DMNH collection of artifacts from Colorado College. This article came out of his research for the Mummy Study Group which plans to build a replica of a wooden coffin in the DMNH collection.

CONSTRUCTION. Wooden coffins date back as far as the Old Kingdom. They were made from rough planks connected to each other by the use of dowels, a method of construction which remained in use until the end of the Middle Kingdom.

By the early Middle Kingdom, approximately 2000 BCE, the wealthy were buried inside a rectangular coffin constructed from well-cut boards of cedar imported from Lebanon. The boards were connected to each other by dowels with tenon joints at the corners. The coffin sat on four or more planks perpendicular to the bottom boards. Glue was used in the Early Dynastic Period for inlay work but was not generally used before the New Kingdom. Therefore, dowels were probably the only method used for connections.

The poorer Egyptians could not afford the imported cedar and had to use local trees such as the sycamore, a popular shade tree in Egypt and Syria, with a sweet edible fruit, and the tamarisk, a small evergreen tree. The boards would have been rough-cut, doweled, and coated with plaster much like the two coffins on display at the DMNH.

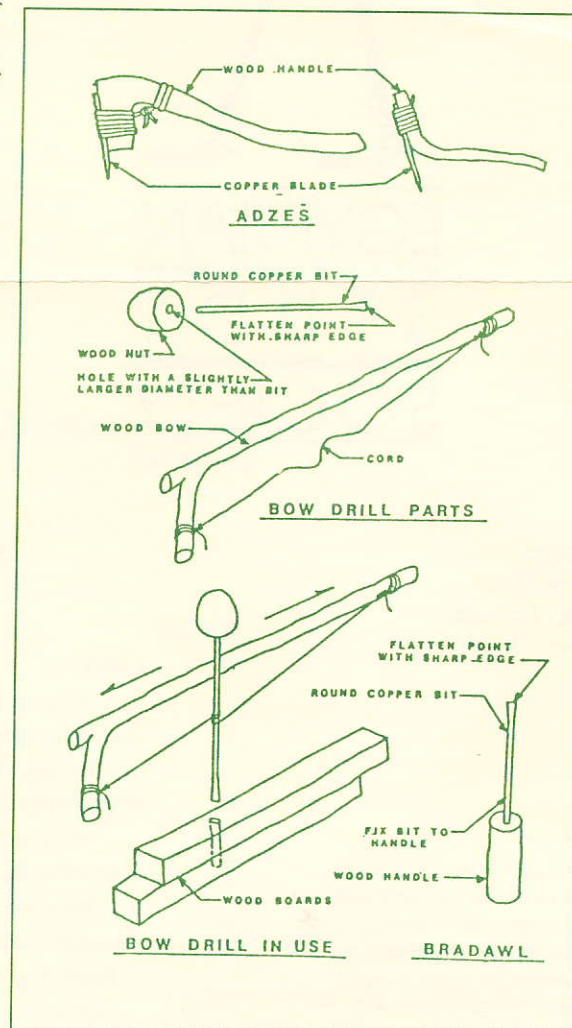
Tools used to construct a coffin probably included a saw to cut the wood by a pulling motion and an *ax* to split

the timber. Holes for dowels might have been drilled by a *bradawl*, which looks like a screwdriver with a sharp edge and a wooden handle. When twisted, it cuts a hole through the wood. Another tool used for drilling holes was the *bow-drill*, which was similar to the bradawl although there was no wooden handle attached, and it used a palm-nut with a hole to receive the bit. A wooden bow with a cord tied at each end was wrapped around the bit, and a rapid sawing motion with the bow rotated the bit and cut a hole through the wood. Because hammers with metal heads were unknown at that time, *chisels* were used to cut tenon joints by being hammered with a wooden mallet. The wood-plane was not used in Egypt, so shaping had to be done with *adzes* made of copper with wooden handles; smoothing was done by rubbing the surface with sandstone. All tools were copper with wooden handles.

Anthropoid (man-shaped) coffins in the Middle Kingdom were made of *cartonnage* (linen soaked in 'gesso' plaster) similar to casts used by modern doctors for broken bones. They would then be enclosed in rectangular wooden coffins. In the late Second Intermediate Period (about 1600 BCE), anthropoid coffins were made from a single piece of wood carved out of a tree trunk. They were similar to a dugout canoe with the addition of a lid on top. The rough wood was then covered with plaster and painted. Throughout the 18th Dynasty wooden coffins were constructed of narrow planks doweled to each other. This resulted in less massive coffins.

In many modest 19th Dynasty burials, lids were placed directly over the mummy. A likeness of the person as he appeared in life was painted on the lid. The lids from the

coffins of Isis and Sennedjem from the Ramses II Exhibit at the Denver Museum of Natural History in 1987 are examples of this. The lid was then fitted directly under the cover lid of the anthropoid coffin.



Sennedjem's inner-lid was constructed of wood, and then plastered and painted. The outside coffin was also covered with plaster which had a raised relief for many of the vignettes and hieroglyphs. The coffin was then painted and covered with a clear varnish. By the 21st Dynasty every inch on the exterior of the coffin was covered by raised reliefs in plaster.

PLASTER COATING: The final stage in producing an anthropoid coffin began with preparing the wooden base with plaster. Three types of plaster were probably known to the Egyptians: lime, gypsum, and gesso.

Lime was used as a fertilizer and could also have been used as plaster. The first step to create plaster from lime involves the process of producing lime from limestone which is called lime-burning. Heating limestone (calcium carbonate) to a high temperature drives out the carbonic acid and moisture, leaving quicklime. After the stone is burned, it is ground up into a powder. When water is added to the quicklime, a chemical reaction takes place which results in hydrated lime or slake lime. Lime putty is a plastering material created by adding a sufficient quantity of water to hydrated lime in order to form a thick paste.

Gypsum plaster was used to cover the walls of the tombs in the Valley of the Kings during the New Kingdom. The process of producing gypsum plaster from gypsum (hydrous calcium sulfate, which has a water content of approximately 20%) consists of crushing and grinding the rock and then heating it. After heating the gypsum at a high temperature, about three-quarters of the water is removed from the powder. This is called calcination. When water is added to the powder, it crystallizes or sets, and thereby, changes back to its original form. This material is known as plaster of Paris.

When plaster of Paris is mixed with water, it sets up very fast, which makes it hard to work with. Lime can be added to gypsum to slow the process of setting. According to Morris Bierbrier in *THE TOMB-BUILDERS OF THE PHARAOHS* (p 47):

"as the stone masons cut away the halls of the tomb, the plaster men were hard at work behind them on the walls. The uneven surfaces were covered with a layer of gypsum and whitewash to make them as smooth as possible. The method of supplying the workers with gypsum seems to have varied from period to period. At one time specific gypsum-makers were attached to each side of the gang to burn raw gypsum and mix it with water to

form the plaster."

Gesso was used as a base for painting and could also be used to make plaster. Gesso plaster is a mixture of glue (a product containing gelatin from animals) and whiting (ground chalk of limestone) which was used for making cartonnage and as a ground for painting over stone and plaster.

To gain insight to which type of plaster was used on the ancient coffins, I conducted my own experiments. I mixed different types of plaster and applied them to 3½" x 6" blocks of rough-sawn cedar. Modern methods of plastering claim that plaster should not be applied directly to wood, and that lime putty used alone will not set and will shrink and crack when it dries.

Methods. By mixing a skim coat (1/16" to 1/32") of lime putty from hydrated lime and applying it to the cedar, I found that it did not bond well and did crack after drying. I also discovered that when plaster of Paris is mixed with water to form a putty and applied to the cedar, it seemed to bond better and did not crack; however, it set up too fast and was hard to work with. I then tried mixing two-parts hydrated lime to one-part plaster of Paris and found that although the skim coat of plaster did not set as fast, the bonding was not as good as the plaster of Paris. Therefore, if a coffin was required to have a raised relief for hieroglyphs (as on Sennedjem's), more than a skim coat of plaster would have been required.

Next, I applied up to ¼" of gypsum plaster to a cedar block and found it bonded well. I cut into the plaster about 1/32" deep with a steel tool to form some hieroglyphs. I then scraped out the plaster between the glyphs. After rounding off the glyphs, it appeared to be about the same depth of relief as I remembered on Sennedjem's coffin.

When I applied up to ¼" of two-parts lime and one-part gypsum plaster to a cedar block, I found that it did not bond as well as the gypsum alone, but it did carve more easily because it was softer.

Another method for obtaining a raised relief could be the application of wet plaster of Paris over a dried skim coat of plaster of Paris. I tried a sample of this method and found it hard to apply and control because it set up too fast. The artwork for hieroglyphs would have to be laid out first on the dried skim coat of plaster, and then the new wet plaster applied over the glyphs. After drying, the glyphs would have to be cut out and trimmed

down. This method may be the easier one when only a few simple glyphs are required in relief. However, when a large area is to be covered with complicated pictures, the first method of cutting out between the glyphs, looks like the logical choice.

I did not have any criteria on how to make gesso plaster, and I did not want to boil down the neighbors dog to make glue! Therefore, I used commercial gesso which is an acrylic polymer emulsion. I added plaster of Paris as a substitute for whiting. The gesso by itself was like a creamy soup, so I added the gypsum to make a paste in order to build it up on the wood block. Even though the gesso was thinned with water, the plaster of Paris did not set up in the gesso like it would have with plain water. This material did not spread like plaster, so I applied it with a putty knife and smoothed it out with a brush. I found that a mixture with a small amount of gypsum added reacted the same way as the larger amount added to the sample board. It bonded to the wood very well; however, there were shrinkage cracks where the plaster was greater than 1/16" thick. These cracks could probably be filled by applying another coat over them. Carving out the plaster for a raised relief seemed to be easy. Not knowing how the Egyptians mixed or applied gesso, I did not continue with any other experiments.

Conclusion. Even though lime plaster and gypsum plaster are common plasters today, A. Lucas, author of *ANCIENT EGYPTIAN MATERIALS AND INDUSTRIES*, states that no evidence has been found that lime plaster was used before the Ptolemaic Period. The reason is that the temperature required to produce quicklime from limestone is 900 degrees C. (1652 degrees F.) and the temperature required for the calcination of gypsum is about 130 degrees C. (266 degrees F.). In a country where wood is scarce and the climate is dry, gypsum would be the better choice. The Greeks and Romans used lime in Europe because gypsum is useless for outdoor work in a wet climate.

This leaves us with only two choices of plaster for the coffins: gypsum or gesso. Gypsum is common throughout Egypt, even though it varies in color and composition. Gypsum is never pure but contains limestone and quartz sand with small amounts of other ingredients. When calcium carbonate (limestone) is found in ancient gypsum plaster, it was probably not an additive, but was a part of the gypsum as it was found. It did not act as lime in the mix but as an aggregate, because the temperature was not high enough to convert it to quicklime when firing the gypsum.

Plaster found in the tombs of Saqqara is of good quality gypsum, 97% pure or better, probably from a source found in the Faiyum. Plaster from the tomb of Tutankhamun varies from 66.3% to 84.8% pure as found by A. Lucas. These would have to be the best available and the plaster used by non-royal persons would be less pure. This would probably explain why some plasters bond better than others. The other choice to cover the irregularities in a coffin would be gesso plaster, but the process of making glue would take more heat than to make calcinated gypsum which is required to reach only 268° F., not much more than the 212° F. to boil water. Gypsum rock would be easier to obtain than the required animals for the glue. My guess is that non-royal coffins were covered with gypsum plaster to cover the irregularities, then gesso was used as sizing before painting.

PAINTING: After the plastering was completed, the final stage of painting took place. The pigments of Egyptian paints are naturally occurring minerals, finely ground. The colors used were black, blue, brown, green, gray, pink, red, white, and yellow. Black pigment was from carbon in some form, possibly soot. Blue pigment was from azurite, a blue carbonate of copper from the eastern desert and used in the early dynasties. The most common blue pigment was an artificial frit that consisted of crystalline compound of silica, copper, and calcium (calcium-copper silicate). This was made by heating silica, malachite, limestone, and natron together. Brown pigment was ocher, a natural oxide of iron from the Dakhla Oasis. Green pigment was malachite, a natural copper ore from the eastern desert, also used in early dynasties. In later times, an artificial frit was used. Gray pigment came from a mixture of black and white. Pink pigment was a mixture of red and white. Red pigment was made from ocher. White pigment from calcium carbonate (limestone) or calcium sulfate (gypsum). Yellow came from yellow ocher, hydrated oxide of iron from the western desert, or from orpiment which was a natural sulfide of arsenic, probably imported from Persia.

The material mixed with the pigments to make paint was water rather than an oil base such as linseed oil (probably known in Egypt) and would have been similar to tempera used today. A binder would have been added. This might have been size (gelatin or glue), an animal product made by boiling down bones, skins and cartilage, or gum of acacia grown in Egypt. Gum and albumin (white of egg) could also have been used.

If a coffin was plastered with gypsum plaster to cover

up faults and irregularities in the wood, it would probably be covered with a coat of gesso to seal the plaster before it was painted. The composition of the varnish applied over Sennedjem's coffin has not been identified. Analyses of a few clear ancient varnishes show them to be soluble in alcohol and ether, but insoluble in turpentine and petroleum spirits. Shellac is soluble in alcohol - the same as the coffin varnish, but ancient natural shellac has a dark color, unlike the clear varnish used which is practically colorless. The solubility of a material can decrease with age and exposure, so the insolubility in a particular solvent may not be original but something that occurred over time.

From examining pictures of coffins and tombs in books and the two coffins at the Denver Museum of Natural History, I concluded that plaster did not always bond well for the Egyptians. As you might remember, the coffin of Sennedjem was almost perfect. He was a builder of the Pharaoh's tomb and knew better than most the proper materials to do the best job. I believe that the person constructing the coffins in the Museum used the local materials available to him. The lack of bonding could have occurred because the wood was too smooth or the plaster was not pure enough. After-all, plasterers today claim that one cannot apply plaster to wood at all!

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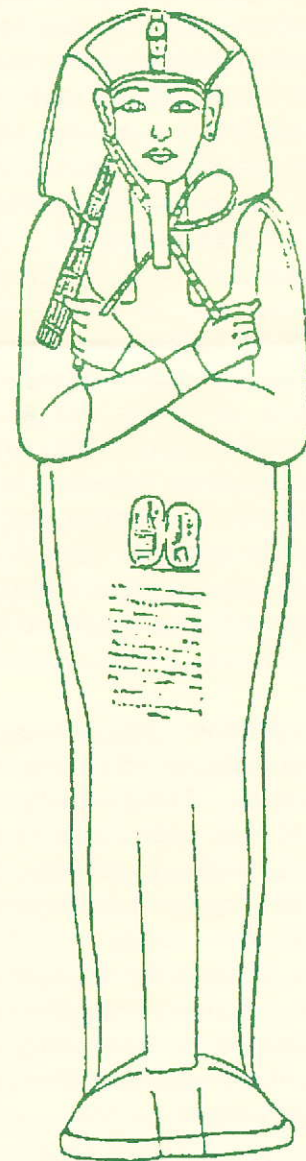
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ANCIENT EGYPT: REBORN IN TROPICAL SEAS?

By Stuart Wier

ABOUT THE AUTHOR: *Stuart Wier joined the ESS a year ago, just as soon as he found out about it. He has been interested in Egypt since childhood though he has not yet been there. Stu has degrees in physics and geophysics from Duke and Princeton. He participated in excavations in Winchester, England, over 20 years ago and personally excavated the grave of a tenth century Saxon nobleman in the ruins of the Saxon Winchester Cathedral! Stu also likes sailing traditional wooden vessels.*

All of us who admire and study ancient Egypt have wondered what everyday life was really like in those times. We gradually build up an unconscious image of the qualities of life in ancient Egypt. Recently, I saw a television special about a society with characteristics which seemed remarkably similar to my notion of ancient Egypt. Again and again some practice or idea would provoke sudden recognition. See if you think the comparison is valid.

This society is an ancient one, animated by a lively religious faith and permeated by colorful art. It is said to be "an oasis of beauty and belief," not a bad description of ancient Egypt, either. Life is based on the village; the heart of the economy is the family plot, hand-tilled. Practically all arable land is cultivated and water is carefully regulated through small channels. The staple grains are viewed as literal gifts of the gods. Religion and art are highly developed and central to this culture.

Rites for the dead are long-planned, expensive and colorful, and serve the role of freeing the ancestors from their bonds to earth. The dead may be uninterred for some length of time before suitable preparations are arranged. Without the proper rites, the souls of the deceased are fated to an indeterminate bondage to earth, unable to fulfill their destiny. Unlike the Egyptians, these souls are destined for eventual reincarnation on earth. However, while awaiting that event, they reside in a land just like the one from which they came except that it is free of all troubles. This is an afterlife the Egyptians would recognize.

The arts are actively pursued everywhere and are a part of daily life, especially sculpture, painting and

traditional dance and music. All of these are expressions of religious belief and of the land of the people. Art is not confined to special crafts; prosperous farmers may also be master sculptors in wood or teachers of dance. The temples are filled with stone carvings. Dancers' masks are believed to literally have a spirit of their own, a connection to the divine.

This fascinating society which recalled the ancient Egyptians to mind lives on Bali, an island bordering the Indian Ocean and part of Indonesia. Superficially very different from Egypt, Bali is a lush tropical land where several crops can be harvested in a year. Egypt, in the time of the pharaohs, was similarly a green land able to feed her people well - but also a place surrounded by the hostile desert where demons lurked. Bali is surrounded by the ocean, which most Balinese regard with trepidation. Like Egypt, Bali looks inward to itself, not out across the sea. The similarity seems stronger than it looks at first, on many levels.

There is one wonderful difference between Bali and ancient Egypt. You can visit Bali and experience a living culture based on the land, the village, and the family, inspired by art and daily religious belief. Balinese life is close to that of ancient Egypt in many ways, very different in others, and very different from our life.

By the way, lest anyone think otherwise, I do not believe there was ever any actual link between Egypt and Bali!



IMPRESSIONS OF A TRAVELER IN EGYPT

By Ann Lowdermilk

***ABOUT THE AUTHOR:** Ann Lowdermilk is known by ESS members as the hostess of many ESS functions for which she and her husband Bob have generously offered their lovely house and garden. Prior to her marriage, Ann worked for Martin Marietta where she utilized her degree in math doing highly sophisticated calculations for their famous programs. She currently tutors students in math and science and "tags along with Bob to Egypt and loves it." Ann is a co-author of "RISK Spelling" in the DPS, an innovative program to help youngsters in grades K-12. Ann's intelligence, sense of humor, and perceptiveness is evident in this article she wrote after "tagging along" on their latest trip to Egypt.*

As the plane landed in Cairo, I had the urge to say, "Toto, I don't think we're in Kansas anymore." Although the English tried to make each outpost of the British Empire seem like home, Egypt said, "No thank you," and brushed aside their fleeting presence. If your answer to the question, "English?," is, "yes" (thinking that they are inquiring about language), they are polite. When the answer is, "No, American," they break into big happy grins and warm up immediately. "We LOVE Americans! We love Bush. You love Bush?" As of February, they were very uncertain and questioning of Clinton.

One of the taxi drivers, who had worked on several projects with Americans, gave us some very sage advice. He said if you want to get along with Egyptians, just open up to them immediately. On the way across town, you can find out about every job they have had, the names of their children, what they think of politics, local and international, etc., etc., etc.

In Egypt, time is fluid like the Nile. Things do get done, but time flows by without many outward signs of change. Most Egyptians seem very happy and relaxed, with more hands to do the jobs than jobs to do. There is time to visit and smoke the hubbly-bubbly pipe with friends.

We noticed an increase in the number of veiled women on the streets of Cairo from November 1991, to February 1993. As the fundamentalists gain in support, more young women feel that they will not be marriageable unless they dress traditionally; that is

clothed from neck to ankle in a dress with long sleeves and wearing a scarf that covers their hair and shoulders, leaving only their faces and hands visible! In Sharm il Sheik, on the Sinai Peninsula, a bank clerk at the new resort hotel proudly introduced his new bride to me. She was dressed from the top of her head to the tip of her toes in traditional attire of bright chartreuse! He, of course, was dressed in western style. They were on a working honeymoon at his new posting. We talked a long time. She was shy and retiring, he was proud and happy. I took their picture with their camera and then with my camera and we exchanged addresses.

In the villages, the women and children looked like exotic tropical flowers that have drifted across the fields on a light desert breeze. Brilliant fuschia, orange, yellow, green, and purple brought bright splashes of color to the green fields and clotheslines of the villages as well as to the edge of the canals where the women were washing. The villages themselves looked like pictures from a child's book of Bible stories -- adobe buildings with dusty palm trees and camels. A camel is much better than a truck in Egypt. It costs much less to buy and maintain and the fuel is free. A camel also lasts for about 20 years, and every byproduct can be used or recycled!

My husband's cousin and his wife have lived in Egypt for the past four years. He is on loan from CSU, training the Egyptians in water resource management. He says that the Aswan High Dam was a necessity for Egypt to feed her people. The increased growing season allows the Egyptian farmer to farm at 198% of the world standard. He believes that they are the best farmers in the world and he truly likes and respects them.

Egyptian law is based on the Napoleonic code and has some strange twists. For example, if you own property and someone else builds a house on it and you take them to court, you will probably lose -- because the house has greater value! One Egyptian found out that someone else was starting to build on his land while he was out of town. Instead of suing, he had a midnight party for his friends, complete with bulldozer and truck. The dozer operator asked why he wanted to demolish a perfectly good house, and he answered that it hadn't turned out exactly as he had planned. By the time the construction crew arrived the next morning, there was no house, just vacant land! The man who had been building the house took the owner of the land to court. But, no house, no judgment. After the trial, the judge commented, "You really understand how to handle the system."

One last word of advice on handling the "system." If you fly Egypt Air, be sure to get your reconfirmation in writing. After having problems on our return flight on our first trip, we carefully reconfirmed at the hotel office of Egypt Air. However, when we showed up at flight time for Luxor, we found our reservations had been canceled.

"You should have reconfirmed."

"We did reconfirm at the Cairo Sheraton Office."

"They don't care. You must reconfirm downtown. Why weren't you here early since you have a problem?"

"We didn't know that we had a problem. Besides, we were here early. We couldn't get into the terminal because we were behind two tour buses of people."

We got on the plane to Luxor, only to renew the battle for space on the return flight to Cairo to catch a plane back to the States. MISR (misery) Travel and Egypt Air have no compassion for the non-group traveler. Get a written copy of that elusive reconfirmation or you might not make it back to Kansas -- oops, Colorado!



EXCERPTS FROM A TRAVEL DIARY

By Lizzie Pepper

ABOUT THE AUTHOR: *Lizzie Pepper will be twelve in August and will enter Middle School this fall. She is very active in sports: on the swim team, a S.C. soccer player, and recently completed the Ceal Barry Basketball Camp. Lizzie enjoys reading and writing, belongs to the Boulder Youth Choir, and loves her pets. She kept a diary during a trip to Egypt with her parents in February, 1993, and the following are the observations of this bright and observant young lady.*

February 7. In Egypt, I stayed at the Cairo Sheraton Hotel in the Cleopatra tower which has a fabulous view of the Nile from the balcony! Today was my first day in Egypt and it was very thrilling to be in such a different country! To catch up on my history, we went to the museum and saw jewelry, old papyrus paintings, ancient clothing material, and mummies of all sorts! But it was a shock to me that the Egyptian museum wasn't just about ancient Egypt, some of it was about Rome and Greece and their conquests of Egypt in ancient times.

February 8. Today was pyramid day at Giza for me and the ESS group. First we saw Khufu's great pyramid and then Menkaure's (grandson of Khufu) pyramid. I got to go inside both of them! I noticed when I was in there that the farther into the pyramid you go, the hotter it gets and the less fresh air there is. I also had a chance to go into Meresankh's tomb, which was extremely exciting because of the beautiful artwork and statues that are placed all over the walls. Then we went to the desert where I saw scarab beetles, and we actually found a mummy! It was buried in the sand and was wrapped up in linen. All around were human bones, skulls, rocks, and pottery of all sorts, mixed in the sand. Our guide is Mohammed Shata, former pyramid inspector from Giza.

Mohammed is going to be guiding us around Cairo 90% of the time we are here! Today I have seen, heard, and recorded in my mind how to write Arabic numbers! They look very different from ours.

February 9. Today we went to Giza again, but mostly we were in the desert. Afterwards, we went to a papyrus shop that was filled with papyrus paintings and my parents and I got about 14 papyrus paintings there! Then we came home, all worn out from the day. We

decided to eat at the coffee shop in our hotel where I had Egyptian lentil soup and it was delicious!

February 10. Today we visited the Red Pyramid and then took our daily stroll in the desert for a little bit. Afterwards we headed to the Bent Pyramid which has an entrance about 30 feet high, or so it seemed. Since I never got the chance to climb the side of the pyramid, Mom, Harriette Peters (a friend), Khalied (an Egyptian inspector of the pyramids), and I visited some other sites in the area, and then waited at the bus until everyone else got back. Also during the day we visited the workmen's village at Giza where they were making new discoveries, which was all the more exciting. There was even a tomb in which the hieroglyphic writing said the owner would put a curse on anyone who touched his bones. I didn't touch anything!

February 12. We went to Mereruka's tomb at Saqqara which was faaaaaaabolous! The entire tomb's walls were completely covered with beautiful artwork which was stunning. We even got to go down into the burial chamber. It was very dusty. After that, we went to Abu Sir where we enjoyed walking around the sun temples. Next, we journeyed over to the mastaba (sort of like a memorial building with a burial chamber underneath) of Ti, and I got a chance to ride on a camel named Moses! He swayed so much that I still felt like I was riding on the camel after I sat down.

February 13. First we went to an Egyptian book shop and bought some books, and afterwards we drove to the Khan-El-Khalili, a bazaar of sorts, where my parents and I bought 2 pairs of earrings for me, and a Horus and three-piece rings for mom and Harriette at the same jewelry store! Also we bought about 60 scarab beetles at the bazaar for my two classes at school, and my mother bought me a jewelry box.

Afterwards we said good-bye to Mohammed and thanked him for being our guide.

February 14. Today we drove through the desert to Alexandria, a city in Egypt on the Mediterranean coast.

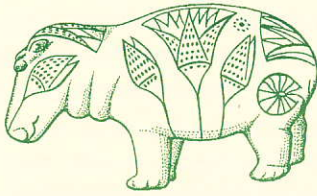
February 15. We met our new guide, a lady named Amira, and headed over to see the fortress of Kyte Bey, a castle built on the site of a famous ancient lighthouse. We went inside and learned a lot about the fortress. Then we visited some more tombs and wandered around the Greco-Roman Museum looking at tons of oil lamps and other stuff. I also bought a camel cushion and some other souvenirs to take home.

February 16. On the way back from Alexandria, I visited a monastery which is a kind of church for Coptic (Christian) Egyptians, and our group had a guide who happened to be one of the monks! I got to grind some grains with a big stone wheel where they make bread. We saw a room that, if you stood in a certain place, you could hear a person whisper who was standing across from you; when they began to talk, their voices would echo in your ears. After the tour, we listened to the man tell some stories about the founder of the monastery, and the monks offered us bread and tea, and then we left.

To finish, I shall tell you about Napoleonic law in a story that an Egyptian fellow told our group: "In Egypt we have a law where if you have bought a piece of land and have not been seen near it for longer than three months, another man can start to build on it. This law, that comes from France, says that you must then sell your land to the man who built his house on it! Well, one day I was driving to visit my land when I saw a first setting of brick foundation. There was a man working on it, so I knew he was building a house on my land. I told him that he was building on my land, but all he did was laugh and said "Try and make me move!" So me and my brother made up a crazy plan to get rid of the man and the house for good! All our friends came to help us from 9:00 p.m. to 4:00 a.m. and we tore down the building! The next day when the man came to work on his house and it was gone, he was furious and told us, "I'm going to kill you! I'm going to kill you!" over and over. But I am still alive, so I guess he just must have found someone else's land to build his house on!" This was about the only way around this silly law.



LECTURE NOTES



Blue glazed hippo. Tomb of Senbi, Meir. Metropolitan Museum of Art, NY

GROWING UP IN EGYPT

Presented by Charlotte Vaille
ESS February Meeting

Reviewed by Stuart Wier

ABOUT THE REVIEWER: *(see earlier article).*

Everyone who attended this meeting experienced a keen, inquiring, and perceptive mind. From the age of eleven, Charlotte Vaille, a resident of Denver, spent almost nine years in Egypt. Her step-father is an Egyptian, a Muslim, and of course part of a large extended family in which Vaille was completely welcome. She clearly loves and appreciates Egypt, a country very rich in culture and history and still regards it as home after years of separation.

Vaille arrived in Egypt just as the British administration was leaving. During her first year in Egypt, Vaille attended a British school - made depressing by a teacher with no love for history or for those with an American accent. She was rescued from this by a Catholic school in Alexandria, guided by a nun who delighted in history. Better yet was the local museum, one of the finest Greco-Roman museums anywhere. A neighbor, Dr. Fauhry, Dean of Archaeology, encouraged her growing interest in the past, and had the patience and good-will to listen to all of Vaille's questions.

Vaille would sometimes bicycle out to villages, where she began to see echoes- or continuations- in modern life of ancient life and practices, such as monument-building in the cemeteries, still called "cities of the dead" by some villagers. One memorable event was finding a skull in the desert, which was determined to be a young adult of some 2000 years ago, who had been killed by a blow to the head. Dr. Fauhry encouraged her

attempts to date other remains found in the desert.

Vaille attended Cairo High School and her interest in history grew. With like-minded friends, she made jaunts which many of us in the ESS can only hope to do some day. These outings included pre-dawn climbs of the Great Pyramid to watch the sunrise, picnics at Giza, and horseback rides into the desert where one can find ancient potsherds and small oil lamps which are very common and datable by style. Many of us can appreciate the thrill of finding an ancient artifact, in place, which you are able to recognize, date, and put in its historical setting.

College work in anthropology, at three universities, extended Vaille's study of human culture, past and present, which continues to the present day.

It is obvious that the Egyptian life and people are close to Vaille's heart, and she shared insights with us which might be hard to find elsewhere. There were several themes she emphasized. One is her conviction that the Egyptians' life today is pretty much the same as two thousand years ago which the informed eye can see in the building practices, daily village life, and even in the arts and dress.

She encouraged us to get to know the Egyptians. They have a keen sense of civility, a great sense of humor, a love of conversation, and they are hospitable and friendly. Vaille urged travelers in Egypt to visit villages and talk to the people. Even if you don't know Arabic you will be welcomed if you have a sincere interest. Drink some tea or coffee and don't be in a hurry to leave. When bargaining with sellers in the market remember this is a kind of conversation or social interaction, not a transaction to be completed in the shortest possible time.

The Egyptians are curious and eager to learn. If you visit a village, they will want to talk about your family, learn what is important to you and what your life is like. Egyptian guides to the ancient monuments - some positions are virtually hereditary and possibly extend back to ancient times to when the families sold artifacts they unearthed - are apt to be much better informed than one would at first suspect. Some have a great deal of knowledge once you get past the normal patter for the tourists. Egyptians are keen for knowledge; Vaille said they have an almost uncanny ability to learn by watching and listening. Some guides have learned to read hieroglyphs through association with trained archeologists. There is a saying that every Egyptian is

an archeologist. Since they are free of colonial restrictions, they are now free to obtain professional training in the study of the past, and many are making a career of it.

Vaille finds "modern" Egypt - especially the Muslim period - even more fascinating than ancient Egypt, a good reminder to travelers to Egypt that they may miss much of value if they only search for the ancient past.

Vaille ended with a few tips for travelers to Egypt (be modest in dress and behavior), and by recommending some books including *UPPER EGYPT HISTORICAL OUTLINE AND DESCRIPTIVE GUIDE TO THE ANCIENT SITES* by Jill Kamil (Longman, 1983). The author is a native Egyptian woman, who Charlotte says understands Egypt better than many other writers. Also recommended was *THE MANNER AND CUSTOMS OF THE MODERN EGYPTIANS* by Edward Lane (first published in 1860 and now number 315 in the Everymans Library) for the basis of much of the Islamic world today.

THE BRITISH INFLUENCE IN EGYPT

Presented by Dr. Charles L. Geddes
ESS March Meeting

Reviewed by Philip Daley

ABOUT THE REVIEWER: *Philip Daley is ten years old and in his first year as a member of the ESS. He plans to be an archeologist specializing in Egyptian studies. Philip is a very busy young man whose other hobbies include constructing WWII models (planes, tanks, etc.), biking, soccer, collecting comics, and playing the violin!*

Although Dr. Geddes has lectured before the ESS on previous occasions, this was my first opportunity to hear him. I thought his talk about the English influence on Egypt was very interesting because it explored a part of Egyptian history that was new to me.

Geddes began with an opening statement about the

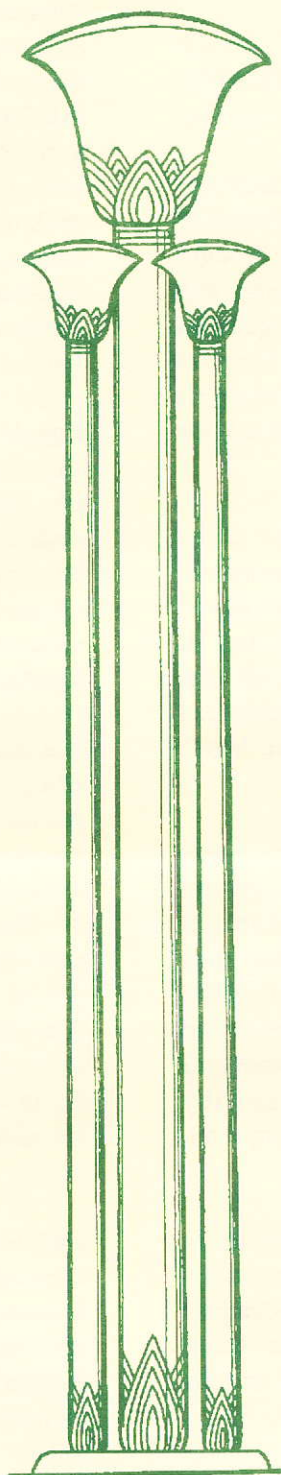
importance of peppercorns in Anglo-Egyptian relations. Protecting their source of peppercorns in India and Asia was very important to the English government as well as to the East India Company. Peppercorns were to the English spice industry what southern cotton later became to the English textile industry. With their empire stretching all the way around the globe, the English were constantly looking for ways to shorten their trade routes. This led them to Egypt - and there they found the French.

Dr. Geddes spoke at length about the struggle between the two great European powers for control of this vital area of the Mediterranean. He explained the rise of Muhammad Ali, the Albanian Major who came to power in Cairo in 1805. Muhammad Ali greatly improved the quality of life for the average Egyptian and tried to lessen foreign exploitation and influence. And of course this led to difficulties with England and Turkey and to the diminishing of his powers. Foreign influences were never completely stamped out however. Dr. Geddes' statement that certain parts of modern Egyptian life still reflected one and two-hundred-year-old influences was very interesting.

From here the talk centered on the nature of the Egyptian people. At first, they were welcoming and hospitable to the English. But abuse and corruption led to wide-spread and intense anti-imperialist feelings which gave rise to occasional armed insurrections.

I was furiously scribbling to keep up with all the names I was hearing, most of whom were new to me: Ismail, Corner, Salisbury, Farouk, Nassar, and the Mahdi whose fundamentalist movement was crushed by Kitchener at Omdurman.

The lecture closed with Dr. Geddes discussing the Aswan High Dam which has both helped and hurt the Egyptian economy. Geddes believes that Egypt faces an uncertain future unless it overcomes the many problems confronting it. I haven't been to Egypt yet, but I think that they can overcome their present difficulties. They've been doing just that for centuries!



Pillar in Temple of Amen-Re, Karnak.

ALEXANDER'S GREAT ADVENTURE IN EGYPT

Presented by Dr. J. Donald Hughes
ESS April Meeting

Reviewed by Cheryl Preyer

At the April ESS meeting, Dr. Don Hughes, professor of ancient history at the University of Denver, brought Alexander's impact on Egypt to life. The audience was captivated by the story of Alexander's heroic quest -- especially the tidbit that Alexander conquered Egypt at the tender age of 23. Hughes' lecture took us up to Alexander's tragic death and the development of his legendary status afterward.

Alexander ascended to the throne of Macedonia at the age of 20 when his father, Philip, was assassinated. Alexander had expressed concern that his father would leave no domain unconquered for himself to tackle. Alexander had memorized Homer's "Iliad" and was determined to out-perform the heroes he compared himself to. He decided to follow a sort of hero's journey.

Alexander took an army into Asia Minor where it met and defeated a much larger army. He and his soldiers continued to march through Turkey (as we know it today) conquering all along the way. By the time they reached the other side of Turkey, the Shah of Persia (Darius III) arrived with his army. The two armies had managed to pass each other! They had to turn around to fight -- each from the wrong side of the field. Again (by now this should not come as much of a surprise), Alexander triumphed and the Persian army fled.

Though Alexander left a path of conquered territories in his wake, two areas stubbornly refused to surrender. The first was Tyre, on the Phoenician Coast (Lebanon) and the second was Gaza. Alexander spent seven months besieging Tyre and, later, a number of months on Gaza.

When Gaza surrendered, Alexander marched into Egypt. His first stop was Peluzium (east of where the Suez Canal stands today). He appeared riding his horse, Bucephalus. This beautiful horse helped enhance his heroic image. The animal could not be broken and so was given to Alexander by his father when the boy was 15 years old. Alexander realized the horse shied at its own shadow and so was able to tame him by riding him

into the sun. Accompanying the king on his many adventurous journeys, the horse finally carried him to India where it died. Alexander paid homage to the beast by naming a city after him.

Back to Egypt: Tyre was an important asset to Alexander as it provided a port. This enabled him to receive a fleet of ships from Greece. Egypt then surrendered to Alexander. He captured it without striking a blow. In fact, Egypt welcomed him with open arms. Its inhabitants had not been treated well under Persian rule and looked forward to new leadership. The Persian representative in charge of Egypt submitted and handed over the territory without a fight.

Egypt embraced Alexander, and Alexander treated Egypt kindly. It is said that Alexander went to Memphis (the ancient capital) and made a sacrifice to Apis, the Bull God, who had been dishonored by the Persians. Alexander was also known on occasion to seek the counsel of Egyptian oracles. This, of course, was very wise on Alexander's part; he assured the friendship and loyalty of the Egyptians by honoring their ways.

Alexander was well-rewarded in his own right. As ruler of Egypt, he was given god-status (what more could a fearless, twenty-three-year-old adventurer desire of his conquests?). Moreover, this was his first taste of ruling as an absolute monarch. Although he was also the ruler of Macedonia, that society operated under a semi-democratic system.

Alexander did bring some Greek elements to Egypt. For example, he staged gymnastic and musical competitions. As in Greece, decorated pots were awarded as prizes. He also integrated elements of Egyptian and Greek myths.

On the Isle of Pharos (which is no longer an island), Alexander founded a Greek city named after himself, Alexandria. He had already named three other cities after himself, though none were as grand as Alexandria. He marked out the boundaries of the city and planned it, including a number of Greek temples and one dedicated to Isis.

Having conquered Egypt at the age of 23, it is obvious that Alexander was an industrious young man. His goal was to conquer the entire world as he knew it. Because he had so much pressing business elsewhere, Alexander did not stay long in Egypt. When he left Alexandria, it was for good; he would not return until his body was transported back for burial.

CONSERVATION IN THE SERVICE OF ARCHEOLOGY

Hughes summarized some key points of Alexander's adventure as follows:

Presented and Summarized By Judy Greenfield

Art & Archeology Lecture Series, April 27

- Alexander believed he was divine.
- Egypt became an important Hellenistic kingdom.
- Alexandria, a great city, was built.
- Alexander died in Babylon of a fever he had contracted in Mesopotamia (Iraq).
- Alexander was worshipped after his death.
- Julius Caesar compared himself to Alexander (also, he had seen Alexander's preserved body).
- Alexander's body was placed in a crystal coffin filled with honey. This was surrounded by another coffin made of gold.
- Alexander was buried in a tomb in Alexandria.
- The tomb has been lost since the Arabic Conquest.
- Ptolemy IV removed the golden coffin and melted it down to pay troops.
- Ptolemy took over Egypt after Alexander's death.
- Ptolemy I and Ptolemy II founded the library in Alexandria -- the greatest library of the ancient world.
- Alexander ruled from Greece to India and from Soviet/Central Asia to Egypt. This was one of the greatest ancient empires.

As usual, Dr. Don Hughes provided his ESS audience with a fascinating lecture and many of us learned a great deal about Egypt and Alexander and how they influenced each other.



Each of us at the Rocky Mountain Conservation Center has had to field questions from the public about such things as where to buy blue spruce and how they may contribute to the "Save the Rainforest" campaign. It's not surprising that people confuse us with an organization concerned with environmental issues; few have heard of the rather unusual field of art conservation.

Conservation is a science-based discipline which aims to extend the shelf-life of an artifact -- be it a painting, print, piece of farm equipment, cave art, or a Faberge egg. But even conservators, with all their best efforts, can't stop the march of time. On a philosophical note, everything eventually succumbs to entropy - that is, greater chaos and a lower energy state. Conservators can, at best, slow down the inevitable decay of our material culture. The key word is *preservation*; we aim to preserve not only the artifact itself, but the information it may contain.

There are three basic aspects of art conservation:

Interventive - in which the artifact is treated in order to chemically and/or physically stabilize it. For example, the artifact may be disassembled, old restorations removed, cleaned, and/or missing portions reconstructed.

Preventive conservation deals with monitoring and controlling environmental factors such as humidity, light, pests, and providing proper display and storage conditions to help prolong the life of the artifact. This aspect of conservation may be thought of "an ounce of prevention is worth a pound of cure."

Investigation - each artifact embodies information about the culture which made and used it. As conservators, we are responsible for extracting and preserving this information.

Within the rather broad field of art conservation are various specialties: objects, paintings, paper, and textile

conservation. But regardless of the area of specialization, we're all ruled by a strict code of ethics set forth by our national professional organization, the American Institute of Conservation. These mandates include minimal intervention (do as little as possible to stabilize the object), thorough documentation, and reversibility of the treatment whenever possible.

The lecture focused on my specialization within the objects conservation field: archeological conservation. Archeological conservation is a particularly interesting area of conservation because it involves sleuthing. Often the conservator makes discoveries about an artifact as treatment progresses. By careful study, analysis, and treatment, an otherwise mute artifact can speak volumes about the people who made it. Often the artifact itself is rather unremarkable and barely recognizable. A particularly good example of this was a Medieval Scottish die. The opposing faces of the die, which were probably made of antler tine, consisted of concentric circles totaling seven, as with modern dice. A void, present in a pair of opposing faces, was revealed by an x-radiograph. According to an archeologist familiar with medieval artifacts, this void may have been filled with mercury to create a *genuine loaded die!*

Slides illustrating case histories of artifacts my colleagues and I have studied and conserved accompanied my presentation. Some of the featured artifacts were no doubt recognized by members of the audience as part of the Denver Art Museum collection. The final slide, a fragment of Egyptian cartonnage, was shown for the benefit of ESS attendees. Stay tuned: the cartonnage fragment is slated for conservation treatment this summer. Bob Hanawalt (who lectured some months ago on Amarna) expressed a great interest in the iconography on the fragment and has painstakingly deciphered its crude hieroglyphs.



NEW DISCOVERIES AT GIZA

Presented By Mohammed Shata
DMNH IMAX Lecture, May

Reviewed By Barbara Garland

ABOUT THE REVIEWER: *Barbara Garland's interest in Egypt was sparked when her husband Gordon, an Egyptian history major, joined the ESS. Barbara grew up on Long Island and, having a deaf sister, studied to teach the deaf in college. She is a professional dress-maker and designer and also works in real estate. This talented lady and her husband were the terrific hosts for the famous ESS King Tut Party last November.*

I would like to preface this review by stating emphatically, I am not now, never was in this lifetime, and probably never will be, a dyed-in-the-wool Egyptophile; my husband is! I am, however, fascinated with people and enjoy putting together the pieces of the puzzle that help to answer the age-old questions: where did we come from and why are we here now?

After an intensive weekend of studying *all you ever wanted to know about pyramids and more*, presented by fellow ESS members, I was pleasantly surprised to find Mohammed Shata's lecture on the new discoveries at Giza a lively and entertaining overview of Egypt - its kings and queens and its pyramids. Shata's lecture was fascinating, and he was extremely knowledgeable, delightfully charming, and funny! It was fun listening to him good naturedly ribbing various members of the ESS who have had the fabulous opportunity to tour Egypt with him. This friendly and knowledgeable man is truly a jewel of an ambassador of good will and an excellent scholar of Egyptian antiquities.

Using slides of recently discovered artifacts, Shata compared some of the similarities between the way things were done in Ancient Egypt and what you still see there today. He showed us several slides of newly discovered statues at Luxor. However, I especially enjoyed his slides and commentary about the recently excavated artifacts from the workmen's village at Giza. The findings were remarkable. It revealed a facet of Egypt I never knew existed, and the statues with their crystal eyes were magnificently lifelike and inspiring to see and hear about. The richness of the burials of these "common people" is surprising, and there should be

much to learn from further excavations in this area.

When Mohammed Shata returns to give another lecture about anything related to Egypt, bring as many people as you can for they will really enjoy him. He is truly a fascinating and scholarly spokesperson for Egypt! Thank you, Mohammed Shata, and thanks to all the ESS members that worked hard to put this program together!

RELIGION FOR THE COMMONERS OF ANCIENT EGYPT

Presented by **Dr. Emily Teeter**
ESS June Meeting

Reviewed by **Ruth Vaiana**

***ABOUT THE REVIEWER:** Ruth Vaiana has traveled extensively throughout Europe and the Orient. She explored Greece last year with her mother. A veteran ESS member, Ruth has served on the ESS Board and various committees. She is also a great cook and has assisted with many of the ESS potluck receptions.*

When we think of religion in ancient Egypt, we tend to reflect upon the kings and their relationship to the gods. Dr. Emily Teeter, Assistant Curator at the Oriental Institute Museum of Chicago, gave us a different perspective.

Teeter explained that we need to understand what the common folk (*rekhyet*) of ancient Egypt believed as well. Contrary to popular belief that only the pharaoh and priests could communicate with the gods, the average person had plenty of access. Assisted by a slide presentation, she did a superb job of illustrating the people's involvement and access to the temples as well as of the roles of private cults, festivals, and popular religion, such as oracles, which had such an impact on common Egyptian daily life.

A brief example from her lecture was the explanation of the Opet festivals which took place periodically. The ritual consisted of the god-statues being removed from the inner sanctuary by the king or priest. They were bathed and anointed, offerings were made and food stuffs were brought in preparation for the eventual journey down the Nile to other temples for worship.

Although the inner sanctuaries were reserved for high priests and kings, ordinary people had ways of getting the attention of their gods. An interesting feature of some temples were the ears carved on the outside walls to insure that the gods would indeed hear the petitions requested by the people. This allowed ready access to the gods for commoners. Also, it's noteworthy that commoners were allowed in the temples to worship, and a number of them even held part time posts as priests. This was a volunteer service and depended on their level



Cosmetic spoon, Sedment. Petrie Museum, University College, UC. 114365.)

of understanding of the religion.

Teeter vividly described how the ancient Egyptians used multiplicity in their worship. The channels of communication to the gods for the commoners included oracles (seers called *rekhet*), dreams (manifestations or signs called *baw*), and the ritual of writing letters on pottery to their dead ancestors' spirit (called *akh*). It was thought that their deceased ancestors were to act as intermediaries to the gods for petitions sent by the remaining living. For common folk, their immediate needs were of utmost importance; one of their most common reasons for seeking the gods was for supplication.

In conclusion, we saw that the ancient Egyptians used woven patterns of ideas and beliefs in their daily life and perceived so called "death" as only a mirrored reflection of the physical world.

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