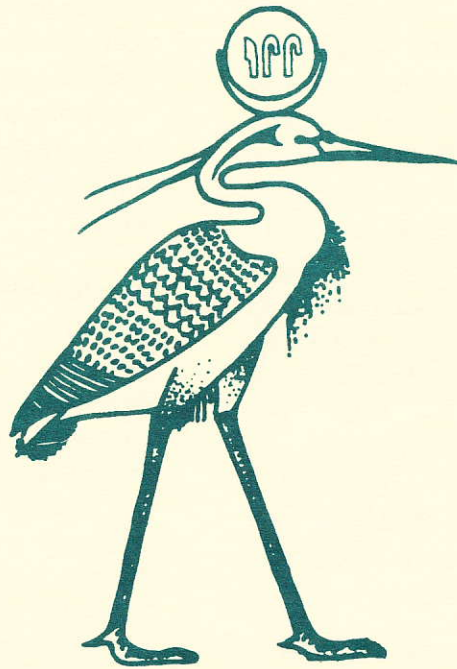


THE OSTRACON



EGYPTIAN STUDY SOCIETY

© DMNH 1989

DENVER MUSEUM OF
NATURAL HISTORY
2001 Colorado Blvd.
Denver, Colorado 80205

ESS BOARD OF DIRECTORS

President Frank Pettee
Vice President Jack Elliott
Secretary Marilyn McCarthy
Treasurer David Pepper

1991-1992 OFFICERS

Liz Feldman
Axel Koerner
Judy Kriss
Bob Lowdermilk
Judy Slivensky

1992-1993 OFFICERS

Chris Advincula
Anne Beck
Dennis McDonald
Evan Mitchell
Jill Taylor

DMNH STAFF LIAISON

Dr. Robert Pickering

PUBLICATIONS & MARKETING COMMITTEE*

Barbara Fenton Dennis McDonald
Mary Pratchett Frank Pettee
Judy Greenfield Jill Taylor
Graeme Davis

MEMBERSHIP INFORMATION

777-5494

The OSTRACON is published quarterly by members of the Egyptian Study Society. The ESS is a non-profit organization whose purpose is to study ancient Egypt. Articles are contributed by members on a voluntary basis. Member participation is encouraged. Nothing may be printed in whole or in part without written permission.

* Formerly the Ostrakon Committee .

IN THIS ISSUE

PAGE	ARTICLE
1	<i>Professionals And Amateurs In Egyptology: Is There A Difference?</i> by Dr. Donald Ryan
3	<i>Interview With Dr. Donald Ryan</i> by B. Fenton & J. Greenfield
5	<i>Giovanni Belzoni: Scholar or Plunderer??</i> by Linda Engel
8	<i>The Use Of Natron In Mummification</i> by Mary E. Vaught
10	<i>Medicines & Medicinal Practices in Ancient Egypt</i> by Frank Pettee
12	<i>The New Egyptian Exhibit at DMNH</i> by Jonna Castle
13	<i>Walking Tour of The Valley Of The Kings</i> by Evan Mitchell
14	<i>House of Scrolls (Book Reviews)</i>

PROFESSIONALS AND AMATEURS IN EGYPTOLOGY: IS THERE A DIFFERENCE?

By Dr. Donald P. Ryan

ABOUT THE AUTHOR: *Dr. Ryan was indoctrinated into the magic of ancient Egypt through a child's book on the topic and has been pursuing the subject ever since. He holds a BA in political science (Pacific Lutheran University), an MA in Anthropology (University of Washington), and a Ph.D. in Archeology (The Union Institute, Cincinnati). Ryan participated in excavations in the Faiyum, the Old Kingdom townsite of Kom el-Hisn in the Nile Delta, and Ashkelon in Israel. His research interests include the Near East, history of Archeology, ancient languages and scripts, materials analysis, and of course, ancient Egypt! And, in case we should think him one-dimensional, Ryan maintains outside interests in mountaineering, martial arts, and, a must for every ancient Egyptophile, cats!*

In all of the literature of Egyptology, the subject of amateur participation is rarely addressed. The role of the amateur is an important one, and in the article below I wish to address a variety of notions concerning amateurs and professionals including friendly advice on how the former can enhance their abilities. **THE RANDOM HOUSE COLLEGE DICTIONARY** defines an amateur as "a person who engages in an activity for pleasure rather than financial gain" or "a lover or devotee of an art, activity, etc." Perhaps the term "avocational Egyptologist" is more dignified, but for the purpose of conciseness, the term "amateur" will suffice. Despite the labels, all those who study ancient Egypt are examples of excellent contributions by amateur practitioners.

Amateurs and professionals are usually separated by several things: most obviously, the professionals seem to have the enviable position of being able to pursue their life's love full-time (usually in a museum or university). On the other hand, there are few jobs today for professionally-trained Egyptologists and I would venture to say that there are a great many more Egyptologists with Ph.D.'s (and Assyriologists and archeologists

in general, etc.) who cannot find full-time employment in their field than there are full-time Egyptologists with stable jobs. Some of these less fortunate individuals nonetheless continue to contribute excellent scholarship while others are forced to drop-out in order to seek a more economically viable existence. Though a professional life as an Egyptologist might seem wondrous to many an amateur, I can assure you that there are many scholars who look enviously at some of the benefits of working in the "real world."

Another big difference is often in the level of education. The professional Egyptologist usually has spent years in graduate school in order to develop specialized skills, typically in ancient language, history, and often art, architecture or archeology. There are, though, a growing number of intense amateurs who approach, if not maintain, a professional standard of competency through their own energy and initiative; note, for example, publisher Dennis Forbes of **KMT** magazine and California obstetrician, Dr. Ben Harer.

Gaining knowledge at this level is not always easy. An awareness of the "professional" scholastic sources (journals, bibliographies, etc.) is necessary as is the capacity to consult these sources as necessary. And then, one must possess the ability to understand and critically evaluate them. This can often be a big problem for the amateur. (For those new to Egyptology, I would suggest an article written by myself, "A *Beginner's Guide to Egyptology*," **KMT**, 1(4):30-34, 64-66.)

Although most books or articles can be consulted in specialized libraries, through inter-library loan or through scholastic photocopying services, the information is often written in a foreign language, typically (but by no means exclusively) French and German. If a professional scholar ignored all foreign language data and relied solely upon those sources written in English, his work would be incomplete and he would be branded incompetent by his peers. Therefore, I would strongly recommend that amateur Egyptologists enhance their skills by developing a reading ability of French and German. The ability to speak and understand these languages as spoken (though

useful when attending international conferences) is not necessary, and a reading ability is often much more quickly and easily obtained.

Rather than being disheartening, the study of languages can be considered a useful, if not necessary, challenge. Very importantly, a good knowledge of the ancient Egyptian language is necessary. Let us assume that the amateur can access and read the scholastic literature in its various modern languages. The fact is that a great deal of Egyptological literature, historical arguments, artifact descriptions, and so forth, are based on grammatical interpretations of the language and writing of ancient Egypt. Without a good knowledge of hieroglyphs and Egyptian grammar, the amateur will often have a difficult time understanding an argument or assessing competing ideas based on texts. In short, studying the ancient Egyptian language is an important tool in the scholastic repertoire of any Egyptologist, professional or amateur, and it can be great fun, too!

It is also important to learn from those who hold specialized knowledge. Many professional Egyptologists are pleased to provide information and guidance to amateurs. Keep in mind, though, that they are often very busy and, of course, they would prefer to be addressed on matters of which they are best trained to speak (for example, I have much to say about the Valley of the Kings, but I am far from being an expert on the pyramids). They also appreciate questions from people who have done their homework on the subject of interest. There are, unfortunately, some professional Egyptologists who find amateurs to be a nuisance. Such professionals would do well to consider and respect the ultimate source of some of their publicly-funded grants, university positions, and museum posts. The public should be the professional scholar's best friend.

Furthermore, the all-too-common hoarding of archeological information is pretty silly. Though it is only fair to allow an investigator to produce the first results of his labor, petty-games amongst the professionals and occasionally between

amateurs can be absurd (note the recent Dead Sea Scrolls controversy). Which leads to my next point: Egyptology is a fascinating subject and can quickly consume one's thoughts and spare time, but don't take it too seriously, to the point where it becomes the meaning of life itself. Fine points of Dynastic chronology and rare Middle Egyptian verb forms can be intriguing but are not worth the life-long feuds that are not uncommon amongst professional and amateurs alike. If one steps back and takes a good objective look, we might recognize that though Egyptology means a great deal to all of us, the world would continue to spin without it. We are indeed blessed to live in a society where such a relatively obscure subject matter can be pursued on a number of different levels.



The point could be raised that having a diversity of interests will enhance one's ability as an Egyptologist. The personal diversity of each Egyptologist can often be applied creatively. In my case, for example, I have been involved in mountaineering for many years and some of my first research with Egyptian materials was the study of the ancient Egyptian rope-making industry. My recreational pursuit in the mountains, with its necessary knowledge of things

such as ropes, led me to look with insight into this relatively unknown subject area.

In my opinion, it is not terribly difficult to be creative in Egyptology. Egyptologists have traditionally concentrated on things involving texts, art and architecture. Looking at such "mundane" subjects as ropes, baskets, or uninscribed tombs, though, is rarely practiced and there are a host of neglected corners to be explored by both professional and amateurs. Much can be pursued through library research or with the cooperation of professionals or even through the interesting process of replication as evidenced by Bob Lowdermilk's provocative experiments with a block-lifting machine, as suggested by Herodotus, for the building of pyramids. Amateurs can do a great deal of original work and will hopefully be able to locate cooperative and knowledgeable professionals to "fine-tune" their research if necessary.

Participation in local groups such as the *Egyptian Study Society* is also a very fine way to share knowledge, to learn, and to make friends. Professionals should enjoy the hospitality, enthusiasm, and general appreciativeness of these groups, things that neither cold stone blocks in a



museum basement nor pages of glyphs in a book will provide. Attending professional functions (such as the upcoming Annual Meeting of the American Research Center in Egypt to be held on April 24-26 in Seattle, Washington) is an excellent way to meet amateurs and professionals alike and to hear the latest research. And for

Egyptological groups, its a fine way to "audition" potential professional speakers and advisors.

Another distinction between the amateur and the professional is the ability to direct or participate in field research in Egypt. At the present time, the Egyptian antiquities authorities prefer that work on the monuments in their country be conducted by teams of professionals and skilled technicians. Given this situation, amateurs can still participate in this work indirectly by joining such organizations as the Egypt Exploration Society, which directly support field work or by "adopting" a favorite field project to support. Some expeditions, such as my recent Valley of the Kings Project, rely heavily on the support of private individuals and groups. In return, the grateful Egyptologists can keep their supporters reliably and regularly informed as the research unfolds and comes to fruition.

In closing, I would suggest that amateurs and professionals have more in common and more reason to respect each other than often assumed. At their very core, they both possess a deep-seated fascination (obsession?) with the human past, and that of Egypt in particular. We are all Egyptologists. If I could summarize my advice, it might be as follows: *STUDY HARD, LEARN WELL, and HAVE FUN.*

INTERVIEW WITH DR. DONALD RYAN January 19, 1992

By Barbara Fenton and Judy Greenfield

Q: *How did you become interested in archeology?*

A: My interest in archeology began in first grade. I must have been around six years old at the time. That's when a schoolmate brought a book about dinosaurs to school and the two of us started a dinosaur club. My friend's mother was accommodating to our interest and took us on field trips to museums. A year later, at Christmas, I received a number of books, including one on archeology and, most importantly, the book *KON-TIKI* by Thor Heyerdahl. Being a very precocious reader, I finished the book quickly and found it very provocative and inspirational. I built a big model of the Kon-Tiki raft out of lumber scraps in my backyard and several of us would play on board, re-enacting the voyage, pretending big fish were swimming below, and so forth. My parents were quite supportive of my interest in the past. They were world travelers and returned from their journeys with lots of books and photographs from all over. One of my archeology books contained a chart with the Egyptian hieroglyphic alphabet. I used the chart to write secret notes to my parents. In short, I had a nice support network of family and little school buddies.

Q: *How did you get interested in Egypt in particular?*

A: I was familiar with Egypt from my archeology books and it was always my favorite area of all of the world's many great areas of antiquity. One book in particular really entranced me: *THE WORLD OF THE PHARAOHS*, by Hans Baumann.

Q: *Was this a child's or a grown-up's book?*

A: It was a book written for younger people. It was presented from the viewpoint of a young Egyptian boy guided by a mysterious old fellow who was supposed to have been a helper of Howard Carter when he found King Tut's tomb. The two characters would go and visit such places as the pyramids and the Valley of the Kings. That's when I became especially interested in the Valley of the Kings. I also read a lot about Egypt



in *National Geographic* and Tutankamen's treasures were always a favorite. One of the things that interested me was the history of archeology: people such as Howard Carter, Giovanni Belzoni, and Theodore Davis.

Q: *When did you first visit the Valley of the Kings?*

A: I first visited the Valley of the Kings in 1981, when I was working as a graduate student on an archeological project in the Faiyum. We had some time off so I headed down to Luxor. It was a very hot July day when I rented a cheap little bicycle and pedaled to the Valley of the Kings and experienced that magnificent place for the first time. In 1983, I returned to Egypt and spent a couple of months exploring the countryside and visiting numerous archeological sites. I visited Luxor again and carried a map of the Valley with which to locate the tombs. The big, spectacular tombs were, of course, very easy to locate, but there were many tombs off to the side and these were very interesting to me. Many were mere shafts, and a few I couldn't locate at all; they were seemingly lost or covered over. I was intrigued by these obscure tombs and did some library research only to find out how little was actually known about many of them. Tomb 21 was actually the tomb that most excited me at the time. It had originally been discovered by Belzoni and by 1983 it had been covered over by flood debris. Belzoni's plan described a large, undecorated tomb and mentioned two mummies. So, Tomb 21 was the original focus of my interest, but I also noted four other tombs nearby: Nos. 27, 28, 44, and 45.

Q: *When did you first start digging in Egypt?*

A: As I mentioned, I first went to Egypt in 1981 as a participant on a project in the Faiyum. I returned to Egypt on my own in 1983, and in 1984 I again participated in some work in the Faiyum. I visited Egypt for short periods of time in 1985 and 1986 and then worked for awhile on a dig in the Delta. In the fall of 1988, I applied for permission to investigate a series of uninscribed tombs in the Valley of the Kings, Tomb 21 and the others. By this time, I had been encouraged by Elizabeth Thomas and others to include Tomb 60 in my research. (The late Elizabeth Thomas is the author of the extremely important reference work on the Valley of the Kings, *THE ROYAL NECROPOLIS OF THEBES*.) Since that tomb

was essentially lost, I thought that at the end of the field season I might take a look around and see if there were any clues to its location. As it turned out, I found Tomb 60, using a broom, in less than a half hour on my first day of work in the Valley.

Q: *Whatever inspired you to pick up a broom and discover Tomb 60 by brushing away the dirt?*

A: We didn't have enough time to formally initiate our work the first day we arrived in the Valley. We had a bunch of tools with us that we were dropping off and, given what little time we had, I decided that a scrutiny of the general area where Tomb 60 was supposed to be located might be interesting. I base my tomb finding abilities on two things: very thorough research on all available materials regarding the tombs prior to stepping foot in Egypt followed by a careful examination of the terrain while on site. From Howard Carter's notes, I knew that Tomb 60 lay in the vicinity of Tomb 19, the 20th Dynasty burial place of Montuherkopeshef (Montu-hir-kopeshef). The entranceway of Tomb 19 was covered with several inches of debris. Using the broom that was part of our equipment, we swept away the dirt in one meter swathes, working away from the entrance of Tomb 19, to expose the flat carved bedrock. It didn't take long to find the discontinuity in the bedrock from which we were able to expose the edge of a pit.

Q: *What was your reaction on entering the tomb?*

A: It was, of course, a very exciting experience and the burial chamber contained a mummy as I expected. The tomb had been severely plundered, but there was plenty of material left by the ancient robbers to keep us very busy with our archeological chores.

Q: *Could you describe the mummy you found?*

A: It was a woman mummified in what appears to be a relatively rare 18th Dynasty female royal pose. The left arm is bent at the elbow across the chest, and the left hand is clenched as if holding an object. The opposite arm is straight along the right side of the body with the hand flat. She was excellently preserved and quite obese.

Q: *What is the archeological evidence that suggests that this mummy might be that of the famous Queen Hatshepsut?*

A: First of all, the notion that this mummy could

be that of Hatshepsut is not my original idea. It began with a very tentatively posed question by Elizabeth Thomas in her book, *THE ROYAL NECROPOLIS OF THEBES*. She suggested that if Tomb 60 was ever relocated, perhaps the mummy of Hatshepsut could be found inside. Tomb 60 originally contained a second mummy, that of Hatshepsut's royal nurse. Thomas's hypothetical scenario involved the intrusive interment of the queen in the tomb of her royal nurse (Tomb 60) in the aftermath of the robbing of her own royal tomb which is located just a few dozen yards away. The evidence is circumstantial at best, and we have not been able to ascertain the identity of the mummy. The mystery of her identity may remain just that -- a mystery. I am making no claims that we have found the mummy of Hatshepsut. We simply don't know.

Q: *Who funds your expeditions?*

A: It is essentially all private money from very generous individuals and companies.

Q: *Did you have any mentors?*

A: There are some people whom I highly respect that have been kind enough to provide quality advice when needed. T. G. H. James is a truly great Egyptological scholar with whom I have had the privilege of associating from time to time. Another fine gentleman is Mr. Maurice Schwartz who is the primary benefactor of my archeological work. Both are wonderful role models, though if I fall short of their excellence, it is my own doing. I have also benefited tremendously from my association with archeologist Mark Papworth and Egyptologist David Lorton.

Q: *Are you teaching now?*

A: Yes, I'm a faculty research fellow in Humanities at Pacific Lutheran University in Tacoma, Washington, and I also teach Ancient History and Archeology at a smaller school nearby. For the last couple of years, I have taught for six months and then I've conducted research and field work during the other six months and have also organized lecture tours for myself. This spring, I'm involved with a BBC television series that commemorates the 70th anniversary of the discovery of Tutankhamun's tomb. That project will take me to Egypt for a few weeks at the end of March. Then in June, I hope to be conducting field research in the Luxor area.

GIOVANNI BELZONI: PLUNDERER OR SCHOLAR ??



By Linda Engel

ABOUT THE AUTHOR: *Linda, employed in the legal department of Bank Western, became fascinated with Egypt when she read her first book about archeology at the age of twelve. This interest was reinforced by traveling to Egypt with her sister and became particularly focused in ancient Egyptian art and mythology.*

Giovanni Belzoni is often held out as an example of the treasure-seeking plunderers of early archeological exploration. When I mentioned to a friend that I was looking for information on Belzoni, she related that one of her college professors started all of his basic archeology classes by citing Belzoni as the antithesis of proper archeological procedure. Over the years, hundreds of that professor's students have been negatively influenced by his use of the following quote from Belzoni's *NARRATIVE OF THE OPERATIONS IN EGYPT AND NUBIA (1822)*:

"and when exhausted I sought a resting-place, and found one: my weight bore on the body of an Egyptian, and it crushed like a band-box. I naturally had recourse to my hands to sustain my weight, but they found no better support, so that I sunk altogether among the broken mummies, with a crash of bones, rags, and wooden cases, which raised such a dust as kept me motionless for a quarter of an hour....The purpose of my researches was to rob the Egyptians of their papyri." (Wortham).

Because of statements like this, and because he placed his name on artifacts and monuments all over Egypt (giving him a reputation for desecration of important archeological evidence), much of Belzoni's work in Egypt has been dismissed. Belzoni and the early 19th century "archeologists," can't be fairly judged by applying today's research standards to their activities and achievements. Today's Egyptologists would find the careless crushing of mummies appalling; but, in the 19th century, mummies were considered so plentiful and to have so little value that, at one

point, they were ground up and exported for use as fertilizer. Powdered mummy was also used as an ingredient in elixirs and tonics.

Giovanni Battista Belzoni was born in Italy in 1778. At the age of sixteen, he went to Rome and spent a few years in a monastery where he gained an education in science and made a study of hydraulics. When Napoleon's army invaded in 1798, Belzoni took to the road as a juggler, strong man (he was well-proportioned and at least 6 feet 7 inches tall), and magician. He made his way through France, Germany, Holland, and eventually England, where he met his wife, Sarah. By the year 1814, the strolling entertainer had turned himself into an inventor. He and his wife had made their way to Malta, where a hydraulic water-lifting wheel invented by Belzoni had attracted the attention of the island's Moslem governor. The governor suggested that Belzoni seek an audience with Mohammed Ali, the governor of Egypt.

The man who presented himself to the governor of Egypt was a far cry from the circus strong man who had billed himself, a decade earlier, as "The Patagonian Samson," capable of lifting 12 people on a 127 pound specially constructed iron frame. Belzoni now acted the part of an Englishman in speech and manner and, very likely, had already accumulated a fair knowledge of history and archeology before arriving in Egypt. Although Mohammed Ali was not interested in the hydraulic water wheel, a new door opened for Belzoni; the renowned Swiss traveler, John Lewis Burckhardt, encouraged the British Consul-General, Henry Salt, to utilize Belzoni's talents.

Burckhardt had discovered a colossal granite head at Thebes, and Belzoni was confident that, with his knowledge of science and hydraulics, he could arrange its transportation down the Nile and shipment to the British Museum. Belzoni's determination paid off. Only three weeks later, the 2.67 meter high, 7 ½ ton head had been dragged on rollers, inch by inch, almost three miles to the Nile, thus launching Belzoni's colorful career in archeology. To this day, this rose granite head of Ramses II remains one of the most impressive pieces in the British Museum's Egyptian section.

Having gained a reputation for his ability to handle

large objects, in 1815 Belzoni was asked by Henry Salt to transport an obelisk from the Isle of Philae for William J. Bankes, the scholar and member of British Parliament. The obelisk, set up in honor of Isis by Ptolemy IX and his wife, Cleopatra, was twenty-two feet long and weighed about six tons. Moving the obelisk proved difficult, particularly when the pier crushed under its weight during the loading and Belzoni and his men had to fish it out of the mud. The obelisk is of particular interest in the history of the decipherment of Egyptian hieroglyphs. According to Sir E. A. Wallis Budge, in 1816 (years before Champollion claims to have deciphered the name of Cleopatra), Bankes identified the cartouche of Cleopatra on the obelisk with the help of a Greek inscription painted on the pedestal.

Belzoni's next monumental attempt was that of clearing the entrance to the Temple of Ramses II to Abu Simbel. John Lewis Burckhardt had been to Abu Simbel some years earlier and had seen colossal heads of statues protruding above the sand and surmised that a temple might lay beneath. Belzoni became determined to extricate the statues from the sand. However, the natives, ignorant of the concept of exchanging labor for currency, refused to work for "small pieces of metal", and Belzoni had trouble gathering a labor force big enough for the enormous task. Belzoni left to get more money and supplies and returned with three other of Salt's men (the artist, Henry William Beechey and Giovanni Finati and Giovanni d'Arthanasi). On their way to the site, they were fortunate enough to run into two British naval officers, Captains James Mangles and Charles Irby, who joined them and assisted in the digging. Finally, on August 1, 1817, Belzoni and his party succeeded in gaining access to one of the most famous sites in all of Egypt.

In 1816, Belzoni visited the Valley of the Kings during a short stay in Luxor. While walking through the West Valley and keeping a keen eye out for clues to possible tomb entrances, he observed a gap between some stones. When he poked a stick into the gap, he found that it penetrated very deeply. In less than two hours, he had cleared away the stones and exposed the entrance to what he referred to as "the tomb of the twelve monkeys", now known as the tomb of Pharaoh Ay. When, in August of 1817, Belzoni

made up his mind to search for more tombs. Although his use of a battering ram to speed up the opening of Tomb No. 25 has been severely criticized, in just a few days, Belzoni was able to open up four more tombs, including those of Prince Montu-hir-khopesh-ef and Ramses I. Four days later, by clearing away an immense pile of rubble, the entrance to the 19th Dynasty tomb of Seti I was discovered. Today, the tomb of Seti I is considered to be the most impressive in the Valley of the Kings, and modern visitors are awestruck by its size and the abundance of brilliantly-colored reliefs throughout. The tomb had been robbed in antiquity, but Seti's exquisite sarcophagus remained. It was made from a single piece of beautiful, translucent alabaster which was intricately carved and inlaid with blue paste inside and out.

On his return to Cairo, Belzoni turned his attention to Giza, where he set himself to the task of opening the Second Pyramid. He observed that the entrance to the Great Pyramid was on the north face and began looking for signs of an entrance on the north side of the Khafre (Chephren) Pyramid. After several weeks of digging on the north side where a pile of debris looked as if it might conceal the entrance, a small open slit was found in the stones. However, it soon became clear that this was a forced entrance made by ancient robbers. Belzoni returned to his study of the Great Pyramid and noticed that the entrance was not in the center of the north face, but about thirty feet east of center. He applied this observation to the Khafre Pyramid and, on February 28, 1818, found the entrance.

In September of 1819, Belzoni returned to London and began work on his "Exhibition" which included, among other things, reproductions of chambers of Seti I's tomb and sarcophagus. The exhibition popularized Egyptian archeology by bringing ancient Egypt to the general public. Belzoni's inclusion of ropes, baskets, and sandals demonstrates his interest in the daily life of ancient Egyptians; which is inconsistent with his image as a mere treasure hunter. Belzoni yearned to return to Egypt after completing the exhibition, but instead was sent out on an expedition to trace a route to Timbuktu. This turned out to be his last expedition. He died of dysentery in a small village in Benin and was buried by natives in this remote

area of Africa.

Belzoni's accomplishments are impressive. During his sojourn in Egypt, he discovered six tombs in the Valley of the Kings, inspected the temples of Esna, Edfu, Kom Ombo, Philae, and Abu Simbel, and made discoveries on the Giza Plateau. Since the funds for Belzoni's explorations came from the sale of antiquities and gifts from wealthy patrons, he was motivated, like most 19th century archeological explorers, by the desire to find treasures and sell them to collectors. However, unlike many of his contemporaries, Belzoni kept detailed records of his activities. He published books including plates with scales; he gave dimensions of tombs and corridors, and recorded tomb and temple wall reliefs in watercolors. Perhaps most amazing of all, he made topical maps of subterranean tombs. It is also noteworthy that a large part of the British Museum's Egyptian collection is made up of items discovered by Belzoni and sold to the museum through Henry Salt.

Although the criticism of Belzoni's methods may have validity, the fact remains that his early explorations had a significant impact among those who prepared the way for more scientific explorations of Egypt. His discoveries were monumental and his record-keeping was some of the most meticulous of his time. Perhaps it was said best by Howard Carter who, almost a century after Belzoni's feats in Egypt, referred to him as "one of the most remarkable men in the entire history of archeology" (Greener).

REFERENCES

- Bratton, Fred Gladstone. *A History of Egyptian Archaeology*. Thomas Y. Crowell Company: New York, 1968.
- Greener, Leslie. *The Discovery of Egypt*. Viking Press: New York, 1967.
- Hobson, Christine. *The World of the Pharaohs*. New York: Thames and Hudson, Inc., 1987.
- Wortham, John David. *The Genesis of British Egyptology, 1549-1906*. Univ. of Oklahoma Press: Norman, Oklahoma, 1971.

THE USE OF NATRON IN MUMMIFICATION

by Mary E. Vaught

ABOUT THE AUTHOR: *Mary, a graduate student at Denver University, inherited a life-long interest in Egyptology from her father and took a DMNH trip to Egypt with him during the Ramses Exhibit. She is working on an annotated bibliography of Egyptian mummies, medicine, and paleopathology with Dr. Pickering.*

It has been known since the time of Herodotus (c. 484-425 BC.) that natron was a very important ingredient in the mummification process in ancient Egypt. Natron is a naturally-occurring crystalline form of sodium carbonate ($\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$), with drying properties much like those of household salt. In modern Egypt, natron occurs naturally in three places: Wadi Natrun and Beheira Province in Lower Egypt and El Kab in Upper Egypt. It is believed that at least two of these modern sites existed in ancient Egypt, along with two others which have disappeared (Lucas). Natron has been found in the archeological record in Egypt as far back as the 4th Dynasty. A canopic box belonging to 4th Dynasty Queen Hetepheres contained a package of what is believed to be intestinal material, soaking in a 3% solution of water and natron. Natron has also been found in solid form in 18th Dynasty tombs including that of Tutankhamen and in refuse lots from the 11th through the 13th Dynasties (Lucas).

The question that Egyptologists and scientists have been considering is not *if* natron was used in mummification, but *how*. Because it has been found in both solution and solid form, it has been debated whether the body was immersed in a tub of natron solution or packed and covered with dry natron to induce desiccation. Advocates of the solution theory have speculated that certain conditions found in Egyptian mummies were the

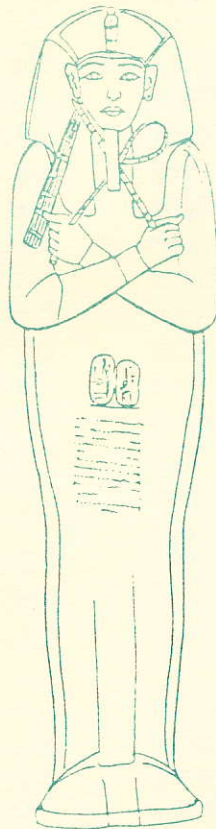
result of soaking rather than using dry natron; these conditions include loss of epidermis and body hair, loosened finger and toe nails, and some cases of dismemberment.

Supporters of the dry natron theory refute these claims. Epidermal loss is seen in many Egyptian mummies, but it has been determined that this may have been from the removal of the wrappings; the epidermis sticks to the linen because of the resins poured over them during the mummification process. The epidermis has also been missing in naturally-preserved mummies, such as those of Peru. These arguments tend to negate the idea of epidermal loss arising from soaking in a natron solution (Sandison, p. 262). The argument of

missing body hair is not supported by the evidence of many Egyptian mummies. Many male mummies have been found with facial hair, and mummies of both sexes have been found with head hair still intact. Lack of body hair could be attributed to social choice, as in modern times and Classical Greece, as opposed to dissolution from soaking in a natron solution (Sandison). As for nails, it has been proven in many studies that although nails will become loose after about the third week of putrefaction, there is no proof that soaking in a natron solution will cause this. Little examination of the nails of mummies is on record at this time, apart from noting their presence or absence. Dismemberment can be seen in Egyptian mummies but the 'why' has not been studied; the causes have been attributed to either slipshod embalming practices or intentional decay of the bodies (especially those of women) prior to delivery to the

embalmer's studio in order to prevent or discourage necrophilia (Sandison).

In the hope of settling the argument, experiments have been performed on birds and human remains by Alfred Lucas and A. T. Sandison (see References). Using pigeons, Lucas immersed some specimens in an 8% natron solution and buried others in dry natron. The soaked specimens were found to be plump but soft and



pulpy, and Lucas notes that it was difficult to handle them without rubbing portions of the skin off. A putrefactive smell, lasting for weeks after removal and rinsing, was associated with the wet solution (Lucas, p. 336). The birds in the dry natron were emaciated, hard and dry, but the skin was intact and there was little smell either during or after the process. The dry birds had loose, wrinkled skin which could have been packed like the limb packing seen in later mummies.

A. T. Sandison performed experiments in much the same vein, but used human specimens, either from amputations, or fresh necropsy samples. Five experiments involved toes placed in a saturated natron solution, dry natron, and natron solutions of varying strength. Another experiment was conducted with two specimens which were allowed to sit overnight to begin putrefaction. The results of all these experiments were basically the same. The only epidermal loss was seen in the toes which had been allowed to putrefy, and there was no loosening of any of the nails. The specimens placed in dry natron were hard, with a brown color resembling ancient Egyptian mummies, while the wet specimens were colored white from salt deposition. Experiments with scalp samples showed much the same results, with no loosening of the hair shafts even in a wet solution diluted to one-eighth of saturated strength. A sample of human iliac artery was placed in dry natron and another in a solution. Both were both preserved; the dry sample resembled those found in Egyptian mummies and regained shape and elasticity when rehydrated, much like mummy samples have done (Sandison).

In order to determine if the 3% solution found in Queen Hetepheres's tomb would preserve human tissues, two human feet were used: one in a 3% solution and the other in a 10% solution. The results were very interesting. The foot in the 10% solution was preserved very much like specimens from the previous tests, while the one in the 3% solution "became grossly putrefied and both epidermis and nails were shed" (Sandison, p. 266). Obviously, whatever was found in the solution in the Queen's canopic box was not meant to be removed.

Questions concerning the composition of the solution were not resolved by these experiments.

Natron in either form will achieve the desired result unless the natron is at a very low concentration. Although these tests are ambiguous, it has been generally accepted that natron was used in dry form in Egyptian mummification. Not only is it more logical to use the dry form instead of attempting to create the correct mix of natron and other fluids, but it would also be much simpler to merely heap dry natron on the body and wait.

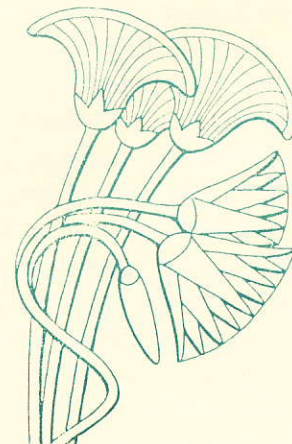
Also, from a personal point of view, I don't believe that the embalmers would prefer to work in an environment that would come from the wet solution; the smell would prove a powerful negative factor. The fact that dry specimens resemble Egyptian mummies is also another good indicator that dry natron was used.

The debate over wet or dry use of natron may never be conclusively decided, but it appears to me that the use of the dry form would be far more logical and expedient. There are also indications that dry natron may have been re-used in subsequent mummifications. Dry natron would not require a large vessel to soak the body and could have been used directly on the embalming table, requiring less movement of the body and thus preventing accidents.

REFERENCES

Lucas, Alfred. *ANCIENT EGYPTIAN MATERIALS AND INDUSTRIES*. London: Edward Arnold & Company, 1948.

Sandison, A. T. "The Use of Natron in Mummification in Ancient Egypt", *Journal of Near Eastern Studies*, XXII, pp. 259-267, 1963.



MEDICINES & MEDICINAL PRACTICES IN ANCIENT EGYPT



By Frank R. Pettee

ABOUT THE AUTHOR.... Frank, president of the ESS, is an amateur Egyptologist who has traveled to Egypt several times. He is one of the founders of the ESS (August, 1988) and has been very active ever since.

Headache? Try this: one coriander seed, one *khasit* (poppy) seed, a *saam* leaf, a seed from the *shames* plant, a juniper berry, and some honey. Make these into a single substance and smear it over the patient's head so that he may get relief quickly. This prescription is from the *Ebers Papyrus*, Pl 47, lines 5-10, translated by E. A. Wallis Budge. Isis once made this remedy for Ra himself. From the same papyrus: to cure a migraine headache, the aching side of the head was rubbed with the head of a fried fish; the pain was then transferred from the patient to the fish, as mentioned by Paul Ghaboungui in his book *MAGIC AND MEDICAL SCIENCE IN ANCIENT EGYPT*.

We learn of these things from various papyri found in temple excavations and tombs; the individual papyrus is commonly named for the person who found or translated it. The *Ebers Papyrus* and the *Edwin Smith Papyrus*, which deals mostly with surgery - are notable examples. The most prominent of these is the *Ebers Papyrus*, dated in the ninth year of the reign of Amenhotep I (1550 BC). It is the main source of information on ancient Egyptian medical practices and medicines; the papyrus measures 34 cubits 6 palms, 1 finger in length (over sixty feet) with 877 chapters. It gives detailed prescriptions for diseases of the eyes, skin, stomach, heart, arteries and bladder. I can present only a few of the 'highlights' here, but those wishing to make a more detailed study are referred to the sources listed at the end of the article.

The Development of Medicine: Medical practice probably began before the 3rd Dynasty with the temple priests, whose training in magic gave them a head-start. These were priests of the goddess Sekhmet who was, oddly enough, the destroyer of

mankind. But the lion-headed divinity, who could visit disease upon mortals, soon became a benevolent deity because prayer could induce her to spare the supplicant from the woes which she could inflict. Another god linked with medicine was Thoth; considered to be the author of secret formulae, he is said to have invented the enema. According to a legend recorded by Pliny, the ibis (i.e. Thoth) used his curved beak to help evacuate the residues of digestion from his gut - hence, the first enema, a procedure still prescribed by doctors today.

The causes of sickness and disease were attributed to evil spirits, and the Egyptians resorted to spells and incantations, as well as medicines, to expel them from the patient. Some medicines were thought to work by absorbing the evil, others by transferring it to another being - like the fried fish we've already seen. Remedies that seemed to work were remembered, recorded, and passed on, and those that didn't have the desired effect were discarded and forgotten. By this process of trial and error, the Egyptians accumulated such an extensive medicine chest that Homer called them "a race of druggists", and Herodotus tells us that Egyptian medical schools were unrivaled in their fame and reputation. Students came from all over the known world to study in Egypt, and even the royalty of distant lands sent to Egypt for physicians to heal them.

Medical Equipment and Treatments. Flax, in particular, had a number of medical applications. It was packed into wounds as an absorbent, made into a drain or plug, and used to clean wounds and apply ointment and other local remedies. Given the Egyptians' expertise in mummification, the art of bandaging presented no problems.

Poultices were made from ostrich eggs (the ostrich was common in Egypt in 3000 BC). Adhesive plaster strips were used to hold wounds closed; sutures were also used, but the papyrus does not describe the material used to make them. Wounds could be cauterized with the fire-drill or with a heated scalpel. Splints were of wood padded with linen; for a broken nose, stiff linen rolls without supports were put into the nostrils to hold the nasal bone straight while it healed (Ghaboungui).



All these accessories, along with some crude surgical implements and their applications, were attributed to the priest Imhotep, who lived during the reign of Djoser, about 3000 BC. Later, Imhotep was raised to divine status, and was revered throughout Pharaonic times.

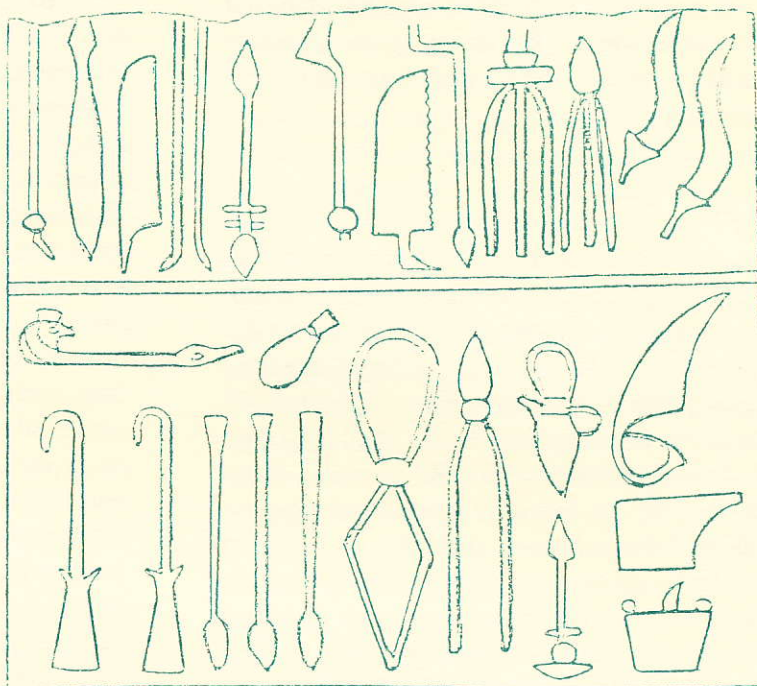
Some wounds were kept open to avoid infection and dressed with astringent herbs and honey. This natural therapeutic combination enhanced the production of antibodies. The application of sour or moldy bread and moldy wood was a practice which lasted until the Renaissance in Europe. Some antibiotics - of which penicillin is the best-known - are extracted from molds even today. Burns were treated with honey, butter, oils, and other fatty substances; in England, butter was a traditional burn remedy well into the twentieth century.

According to Herodotus, one surgical practice was circumcision. The Egyptians were the first people to practice circumcision, well before the Syrians or Phoenicians, and the Hebrews acquired the practice from them. Girls were subjected to a similar surgery, although this must have started after the Exodus. Anesthetics used by the Egyptians were sedatives like opium, belladonna, and other plant-based drugs, some of which are still in use.

Egyptian medicine and medical practices expanded into the civilizations of Mesopotamia and Greece, and thence to the rest of the ancient world. Gradually, the Egyptian medical profession developed a creed, or a code of ethics, which was taught at their universities; that creed formed the basis of the Hippocratic oath.

No doubt some of the remedies and treatments described here will have inspired amusement and horror in the reader, in more or less equal

quantities. But was the magic and medicine of ancient Egypt so crude when we consider that even in the 17th century, there was still a strong belief in witchcraft and bleeding was still prescribed as a curative?



A drawing of some of the surgical instruments carved into the "MEDICAL WALL" of Kom Ombo Temple

REFERENCES

- Budge, E. A. Wallis. *THE DWELLERS OF THE NILE*. New York: Dover Publications, Inc., 1977.
- Ghaboungui, Paul. *MAGIC AND MEDICAL SCIENCE IN ANCIENT EGYPT*.
- Hatem, M. Abdel-Kader. *LIFE IN ANCIENT EGYPT*. Al Ahrum Commercial Press: Cairo, Egypt, 1982 (Second Ed.).
- White, Jon Manchip. *EVERYDAY LIFE IN ANCIENT EGYPT*. Capricorn Books: New York, 1967.
- Wilson, John A. *THE CULTURE OF ANCIENT EGYPT*. The University of Chicago Press: Chicago & London, 1951.

THE NEW EGYPTIAN EXHIBIT AT DMNH

Reported by Jonna Castle

ABOUT THE AUTHOR: *Jonna is a founding member of the ESS and was on the Board of Directors for three years. She conducts schools and lectures on Ancient Egypt and has traveled in Egypt. Jonna is a close friend of a Nubian family who lives in a village across the Nile from Luxor; she is learning the culture of modern Egypt which is not too far distant from that of the Ancients.*

The two Egyptian mummies that attracted visitors on the Museum's first floor are now in a new location in a secluded area on the Museum's third floor. The new Egyptian display includes a number of accompanying grave and mummification artifacts. It is in the building's new wing, opposite the Phipps Gallery.

Visitors will recognize the model of a typical temple, first displayed during the Ramses II Exhibit. Its cut-away section helps viewers understand temple architecture and reveals the functions within its walls: the sacred lake, pleasure gardens and orchards, royal palace, inner sanctuaries, slaughter house and vast storage rooms. Outside the temple walls one sees the necessary support system of the workmen's village and the surrounding agricultural community.

From the same exhibit, a large painting of Ramses II at the Battle of Kadesh dominates the south wall. It tells the story of the Pharaoh's victory over the Hittites, as Ramses himself told it on the walls of Abu Simbel, the Ramesseum, and Luxor and Karnak Temples. This was faithfully reproduced by Museum artist, Carol Dufficy, and it was on the first floor atrium wall during the Ramses Exhibit.

Another reproduced painting depicts Ramses II making incense offerings in the temple. Its well preserved colors duplicate those on the temple wall at Abydos.

Since the Museum's two mummies have made recent history, no doubt they will attract a great deal of attention. The more elaborate and best preserved coffin contains a poorly embalmed woman's mummy, which suggests that the contents and the sarcophagus were not originally intended for each other. The coffin is closed and the mummy is not displayed.



The situation reverses itself in the second mummy and coffin. This sarcophagus lid is removed to display a small mummy of a 25-35 year old woman. The manner of her embalming, as well as the jewelry and amulets seen beneath her linen wrappings, indicate that she was probably from a wealthy family. Mysteriously, translations of the hieroglyphs on the lid of her sarcophagus indicate she lies in a coffin intended for the male Mos, or Moses.

Tremendous detail about both mummies was produced from the tomography, or CT, scan. Texts and pictures, with complete information from the new technologies, will soon accompany both mummies in their display cases.

Nearby, a case displays mummification and/or grave goods, including faience shwabties, amulets, scarabs, bronze hook for removing the brain, and mummified animals. In the same room, easy-to-read wall panels display a written history of mummification.

Over the next two years, the Anthropology Department plans to expand this exhibit, adding other artifacts from the Museum collection and installing ways of showing the public how the computerized tomography (CT) machine provides information for learning. Dr. Robert Pickering describes it as "an encyclopedic way of storing information and allowing us to retrieve it at our own leisure."

ESS members have ample opportunity to be a part of this new high tech educational process. Volunteers are asked to gather information for the Hypercard stack - a process which will allow the information to be put into various media and

which might include music, moving images, verbal or written images. The viewer can then retrieve the information in a way that best suits his learning needs. The projected goals include having weekend docents in the exhibit area.

Editors' Note: This new exhibit can be a major focus for active participation for ESS members. Possible future activities might include: providing information for visitors (i.e. costumed docents), arranging a display of books which would dovetail with the exhibit, disseminating ESS membership materials, and, possibly, fund-raising to purchase small artifacts for the exhibit.

A WALKING TOUR OF THE VALLEY OF THE KINGS

Notes on the January 21 ESS
Meeting

By Evan Mitchell

ABOUT THE AUTHOR: *Evan, who has a BA in Drama and Theater and is a new member of the ESS Board of Directors, has had a life-long interest in Ancient Egypt. After all these years, he intends to verify for himself the truth and accuracy of the pictures and articles in the **National Geographic** as he will be leaving for Egypt on March 17th!*

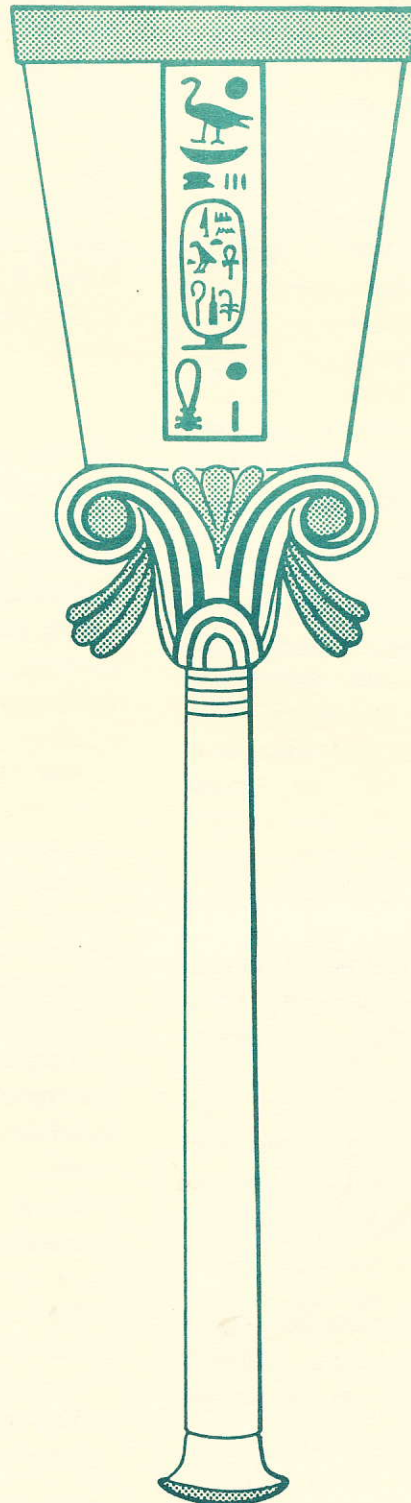
Due to the construction in Ricketson Auditorium, the January meeting of the ESS was held in the T-Rex Cafeteria. ESS member, Dennis McDonald gave a slide presentation and lecture on the Valley of the Kings to a standing-room-only audience and in spite of the rather

awkward facilities and equipment, he managed to captivate us all for over two hours!

Members and visitors were treated to what amounted to a walking tour that included all of the tombs in both the main section and the area known as the Western Valley. The latter is often passed over by tourists but contains some fascinating tombs. Many of the tomb interiors were illustrated with floor plans, photographs, or both. Dennis also gave us directions to some of the best views for taking photos, spots overlooking large scenic areas of the Valley.

In ancient times, the locations and plans of the tombs would have been a tightly guarded secret. This would explain some of the near intrusions of one tomb into another. It's amazing collisions of the underground tunnels didn't occur more often than they did as there are over 60 tombs catacombing their way through the rock cliffs.

Over the centuries, the Valley's use as a burial ground for the royal personages and a few of their select servants did not go unnoticed by the less reputable members of society. The vast wealth that was sealed away for eternity with its noble owners was probably "recycled" into the economy within a few short years. However, what those robbers left behind still dazzles the eye and fires the imagination.



HOUSE OF SCROLLS



READING LIST FOR THE VALLEY OF THE KINGS

Recommendations from
Jill Taylor and Barbara Fenton

VALLEY OF THE KINGS

John Romer. Henry Holt and Company, Inc.
(NY, NY) 1989. Lib. of Cong. Catalog No.:
88-45752,

VALLEY OF THE KINGS -- HORIZON OF ETERNITY

Erik Hornung (translated by David Warburton).
US Ed: Timken Publishers, Inc. (NY, NY) 1990.
Lib. of Cong. Catalog No.: Cataloging in
Publication Data. [German Ed. titled, *Tal der
Könige*: Artemis Verlag (Zurich & Munich)
1982.]

THE COMPLETE TUTANKHAMUN

Nicholas Reeves. Thames and Hudson Ltd.,
(NY, NY) 1990. Lib. of Cong. Catalog No.:
90-70202.

*The Valley of the Kings.....*What exactly is this place? For some of us, the mere name conjures up visions of rich and elaborate processions floating down the Nile as throngs of mourners line the banks of the river to watch their God-Pharaoh journey to his final earthly resting place. For others, this arid valley, with its limestone cliffs set amidst the Theban Hills, is the stage for exciting archeological digs where, for certain months of the year, they go to work excavating and recording and always hoping for exciting discoveries. (The glamour of King Tut's tomb may be lacking but

the importance to the scholar can be phenomenal!) The books mentioned above present three different perspectives of the Valley from three very different men who share a love for their work and concern for the future of the Valley. Each book is an absolute treasure house of terrific photos, engravings, and maps of the Valley, of the tombs, and of the adventurers who have labored and explored there for the last hundred years or so. Many of these records date back to the 1800s, before vandalism took its toll, and show us things which no longer exist or have been moved from their original locations to museums and private collections throughout the world.

According to John Romer in his book, *VALLEY OF THE KINGS*, "The Valley of the Kings was made as a theatre for the gods, a carefully selected and controlled setting for great cosmic dramas. The Valley, however, was not made for the worship or habitation of the gods but for the secret hidden dramas of royal death and resurrection." (p. 24)

Romer's book reveals an intimate history of the Valley from tomb building during the New Kingdom Dynasties through the fall of the last Dynasty and its rediscovery by soldiers, scholars, collectors, and vandals from Europe. Sometimes these characters trod a fine line between scholar and plunderer, frequently stepping over that line. (For example, Napoleon "exported" the obelisk from the Luxor Temple gateway, yet a corps of 167 botanists, geologists, biologists, architects, chemists, and artists accompanied his 1798 expedition to Egypt. These "savants" and artists made an exhaustive study of Egypt's monuments, geology, and flora and fauna and published a huge body of work on same.) We meet "up close and personal" many of those first adventurers who took home amazing tales and mysterious artifacts of this remarkable culture.

For Nicholas Reeves, in *THE COMPLETE TUTANKHAMUN*, "The tomb, in short was a microcosm of the hopes, beliefs and aspirations of an Egyptian king more than 3,000 years ago" (p. 126) and "....through the objects from the tomb it is possible to see beyond the god-king to the



boy-mortal. Who he was, why he died, what was buried with him -- these are just some of the topics on which, with the help of Carter and his successors in the field, fresh light may now be shed" (p. 12).

Reeves introduces us to Howard Carter and the circumstances surrounding his collaboration with Lord Carnarvon. He then recounts the story of Carter's discovery and subsequent excavation of Tut's tomb, including the boy-king's ascent to the throne after the death of the "heretic" Pharaoh, Akhenaten. We see the treasures as Carter carefully uncovered them, working his way through each room, and we come to know the man as well as the archeologist. Reeves assembles the funerary artifacts by type (i.e.: grouping faience & glass, chariots & thrones, ritual figures & magical objects, etc.) for our detailed examination and comparison. When he put the word "Complete" in his book title, he meant it!

In *VALLEY OF THE KINGS - HORIZON OF ETERNITY*, Erik Hornung described the Valley as "the largest open-air museum in the world....The Egyptian love of imagery opened up

almost unlimited possibilities of religious expression using pictorial symbolism (wall decorations in the tombs)" (p. 9).

Hornung's book focuses on the religious aspects of the ancient Egyptians as he interprets, literally and symbolically, numerous scenes and spells contained in the tomb decorations throughout the Valley. His discussions of the religious texts include those created during the 18th Dynasty such as the *Books of the Netherworld* and the *Litany of Re*. Hornung's fascinating explanations go far to help the reader understand the Ancient Egyptian's psyche as he attempted to comprehend the world around him.

Pick up at least one of these captivating tales to prepare you for the March meeting with Dr. Don Ryan! Whether you indulge in Romer's wonderful overview of the Valley of the Kings, Hornung's compendium of the religious symbolism found in the Valley, or Reeves' detailed history of its most famous tomb, you'll learn a lot and you'll love the pictures!!

THE DENVER MUSEUM OF NATURAL HISTORY
2001 Colorado Blvd.
Denver, CO 80205

