

## **BOOK REVIEW**

### **My Patients Were Mummies**

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This autobiographical book chronicles the career of one of the world's most respected mummy experts, but it is more than that. It is a mini-history of paleopathology, the study of disease in the ancient world. Dr. Zimmerman is doubly qualified for this task, he is a pathologist, specifically trained to detect disease, but also a physical anthropologist, qualified to examine skeletal material of the long dead and see what can be read from the bones.

The book is for those seriously interested in mummy studies and diseases of ancient civilizations. The scientific and medical terms come fast and furiously, but there is a glossary at the back of the book, so reader, don't despair. The book is a virtual encyclopedia of mummy studies. By page 4 you already know how to make Ruffer's solution, the concoction Sir Armand Ruffer invented to rehydrate mummy tissues so he could study them under the microscope. By page 9 we know the components of the solution the ancient Egyptians used in their earliest attempts to mummify their deceased. So this book is part autobiography, part how-to textbook, and part history of paleopathology, and has something for everyone interested in mummies or disease in the ancient world.

Zimmerman was one of the early founders of the Paleopathology Association, a group of physicians, Egyptologists, anthropologists, biologists, etc., who banded together to study diseases in the ancient world. In the early 1970s they gathered to perform autopsies on four mummies belonging to the Pennsylvania University Museum. Called PUM-I, PUM-II, PUM-III, and PUM IV, these mummies were the beginning of modern paleopathology. They were x-rayed, unwrapped, their tissues rehydrated, sectioned and put under microscopes, their blood was typed, and much was learned about disease in ancient Egypt.

Because the ancient Egyptians were at one point the most advanced civilization in the world, there is a tendency to imagine them as happy and healthy all the time. The studies of the four mummies clearly demonstrated that this was not the case. As a matter of fact, the average Egyptian was sick much the time.

Zimmerman and his colleagues found particles of charcoal in the lungs of the mummies, suggesting anthracosis, an illness caused by living in enclosed houses and cooking food on open fires. To make matters worse, the ancient Egyptian also had sand in his lungs, a hazard of living in a desert country. There were other recurring health problems as well. Often there was schistosomiasis, a disease still prevalent in Egypt today that is caused by tiny aquatic snails entering the body through the soles of the feet. (Don't walk barefoot on the banks of the Nile!) With each mummy examined, techniques to study them improved and our knowledge of ancient disease along the Nile grew.

A fifth mummy, ROM-I, supplied by the Royal Ontario Museum, added still more details to the picture of disease in ancient Egypt. This mummy was discovered still in his coffin with a

hieroglyphic inscription telling us his name, 'Nakht,' and his occupation, 'weaver.' This was a lowly profession so he did not have top of the line mummification, and his organs were left inside his body. This was a boon to the researchers; there was more to study.

X-rays showed that Nakht's wisdom teeth were well developed but hadn't erupted yet, so he was a teenager when he died. The x-rays of Nakht's bones also revealed what are called Harris lines. These lines, sometimes called 'growth arrest lines' indicate a period of illness, when all the body's nutrients are needed to fight a disease, and growth stops till recovery. So, sometime during his brief life, Nakht had a serious illness. Examination of his intestinal tract showed he suffered from both tapeworms and schistosomiasis. He had at least two infections and examination of his bladder showed his urinary system had been involved in the infection. Our weaver was not a healthy teenager.

With all that was learned about him, Nakht became the poster boy for paleopathology and what could be learned from a mummy. Zimmerman includes an epitaph for the young weaver:

There was a young weaver called Nakht,  
Whom disease severely attackt.  
When he finally died,  
They dried out his hide,  
But left all his organs intakht.

Even when one deals with death all the time, there is room for levity.

Egyptian mummies are not the only mummies Zimmerman has studied in his long and productive career. There are chapters on frozen mummies found in Antarctica and Alaska and even a chapter on the cause of the Salem witchcraft mania. Here the culprit may have been an ergot fungus with hallucinogenic properties that can grow on rye. Zimmerman suggests, with good evidence, that ingesting this fungus may have caused the visions reported by the young girls at the Salem Witch trials.

A brief but fascinating chapter, "Practicing Medicine in Ancient Egypt," surveys what the ancient Egyptian physician knew, and what he didn't. Remember, this was thousands of years before germ theory so the causes of most illnesses were unknown to the ancient physician. They were also challenged when it came to anatomy of the human body. While it is often claimed that they were skilled in anatomy because of what was learned during mummification, this wasn't the case. During mummification, the internal organs were removed through a four-inch abdominal incision and this didn't allow the embalmers to see the relative position of the organs, and it certainly didn't give them any indication of the functions of these organs. They were literally working in the dark.

The Egyptian physician apparently didn't understand the function of the brain, and discarded it at the time of mummification. They believed that you thought with your heart, not your brain, which makes some sense. When you get excited, it is your heart that beats quickly and can be felt,

not your brain. We even have a holdover today from this belief. On Valentine's Day we send chocolate hearts, not chocolate brains.

The ancient physician was far better at treating trauma injuries than infectious diseases. With trauma, the cause of the distress was known and the course of action clear. One ancient medical papyrus, the *Edwin Smith Surgical Papyrus*, deals primarily with trauma to the head and how to treat such injuries. Zimmerman surveys other medical papyri and gives fascinating examples of remedies suggested by the ancient physician.

In his chapter "An Egyptian Mummy is Made in Baltimore" Zimmerman describes a research project I was involved in 25 years ago. In an attempt to learn the details of how the ancient embalmers mummified their dead, a colleague and I mummified a human cadaver in the ancient Egyptian manner. Using replicas of ancient tools found in Egyptian tombs, we removed the brain through the nose, eviscerated through a four-inch abdominal incision and dehydrated the body in natron brought back from Egypt. (Don't try this at home kids.)

After the mummy was dehydrated we sent tissue samples to Zimmerman to rehydrate and study under his microscope so we would have a detailed record of our results. Zimmerman describes it all very well. Only one correction is to be made. My colleague in the mummification project was Ronald Wade, not "Nicholas Wade" as stated. (p. 95). Our mummy, like ancient Egyptian mummies, was wrapped in linen and he has been at room temperature to 25 years with no signs of deterioration. Still, what's 25 years to the ancient Egyptians?

**Bob Brier**

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