

Q&A: Dr. Bob Brier, Ph.D. (Egyptologist)

Q: How did you become interested in Egyptology, particularly mummies?

I became interested in Egyptology because of my love of languages. The hieroglyphs looked so exotic I just had to read them. I started reading about mummies because of my medical background, and soon realized Egyptologists didn't know everything about them. There were a lot of gaps to fill in, so I tried to fill the gaps.

Q: What do you find most rewarding about your involvement in this film project?

One of the most rewarding things about working on this giant-screen film was seeing how it was made. It was amazing to see all the people involved, from the IMAX® cameras, set designers and the set decorators to the costume people. I'd never been involved in a production this big. It was just a lot of fun.

Q: What are some sophisticated mummification techniques used by ancient Egyptians that are revealed in the film?

One of the things that the ancient Egyptian embalmers never revealed was how they removed the brain through the nose -- or any of the other surgical procedures they did. When Ron Wade and I performed the first mummification in 2000 years, we were trying to figure that out. If you look carefully on the screen, you'll see Ron Wade and I are doing just those things that the embalmers never revealed.

Q: How hard was it for you to learn and piece together those techniques in order to create your own mummy, and has your own experiment been a success so far?

It probably took ten years to create our modern mummy. We had to do a lot of research, including looking at the temple walls and reading ancient sources. But the really hard part was putting the team together; we had to have ceramics people make the vases for us and we had to find ancient surgical tools. We were very fortunate to have a great number of people working with us -- you look at it on screen and it appears like it's just Ron Wade and I, but we had hundreds of people helping us behind the scenes. The truth is I wouldn't do it again. And don't try this at home, kids -- we're all professionals. We may not get paid, but we're all professionals!



Q: Why are mummies such important time capsules?

Mummies are crucial to medical science. If you know how to read a mummy, it's a little bit like an encyclopedia. You can figure out what diseases in the ancient world were like, how the mummy died, how old he was, and the type of diet he had. So we can find out an awful lot about the ancient Egyptians and ancient disease just by studying one mummy.

Q: Why is the science and “embalmed evidence” in *Mummies: Secrets of the Pharaohs* so important? How can this film’s forensic adventure provide clues to the distant past?

I think the most important message in *Mummies: Secrets of the Pharaohs* is that we're just on the verge of getting the DNA out of ancient Egyptian mummies. That's what we reveal in this film for the first time. It's our big headline – now we know we can look in the bones of mummies and extract DNA. We're on the verge of some very big discoveries.

Q: What are the biggest challenges faced by modern-day scientists when examining ancient mummies?

When we examine a mummy, one of the difficulties is that we don't want to damage it. We try to do everything non-destructively. For example, in the old days, we used to unwrap mummies – now we do CAT scans. We only take small samples and we don't cut him open to see what's inside, so obviously the mummy is more difficult to examine. The most difficult thing is to extract DNA – long sequences that will provide real information about the ancient Egyptians.

Q: State-of-the-art techniques are now being used to study mummies. What new evidence does DNA testing and non-invasive CAT scans reveal and why is it important for scientists to try to reconstruct mummy DNA?

By using new high-tech techniques like CAT scans and DNA analyses, we're going to be able to tell all kinds of things about mummies. For example, there are lots of questions about how the Pharaohs are related. We'll be able to settle these questions with DNA analysis. From CAT scans, we can look at bones and see if they're what we call well-mineralized or not. We can even tell if they ate meat, vegetables and fish!



MUMMIES
Secrets of the Pharaohs

Q: What insights are gained by watching this film, in terms of modern human genetics and diseases? How could this research potentially be used to advance medical treatments?

By studying mummies, we can learn about a disease in the ancient world that may help us cure a disease in the modern world. We can predict its course and perhaps be able to figure out a cure. Studying ancient malaria, for example, can help us find out more about what's happening with modern malaria and possibly find a cure.

Q: What do you hope audiences will learn and take away from seeing the film *Mummies: Secrets of the Pharaohs* and why is the giant screen format, in particular, a good way to communicate?

There are several things I'd like people to learn from our film before they walk out of the theater. One is that mummies are very important scientific tools. They're not just objects in museums, but they're research objects. If we examine them carefully and properly, we're going to learn an awful lot. You walk away with the feeling that mummies are packed with lots of information; you just have to know what to do and where to extract it. I think the IMAX® format is terrific to show not just mummies, but all of Egypt. You get a sense of the grandeur of the place. And looking at a mummy that's four feet high is fabulous! People are going to see mummies up close and personal in a way that they've never seen before.