



THE MUMMY DOCTOR

Ronald Beckett examines long-dead “patients” to learn their secrets

When Ronald Beckett gets a call that a mummy has been unearthed, he drops everything and heads to the site. Beckett has traveled to some of the world's most remote locations—like jungles in the Philippines, the fringe highlands of Papua New Guinea, and the Atacama Desert of northern Chile—to examine mummies. To get to those places, he's hiked steep mountains, crossed treacherous rivers, and journeyed deep into jungles.

Beckett is a bioanthropologist at Quinnipiac University in Connecticut. He uses his knowledge of human anatomy and cultures to study the physical development of humans over time. His examinations of mummies reveal clues about the illnesses the person suffered from and the societies in which they lived.

How do you examine a mummy? In the field, I work with a team of scientists that usually includes paleoimaging experts and bioarchaeologists. First, we take photographs

of the mummy. Next, we use *X-rays* to get two-dimensional pictures of the mummy's insides. Then we look within the mummy with an *endoscope*, a tiny fiber-optic camera on the tip of a long, flexible tube. We insert the endoscope into the mummy through the nose or mouth, or through openings made by vermin infestation or deterioration over time.

If we find something that we want to study further, we may transport the mummy to a lab. There we can take *CT scans* and *MRIs*, 3-D digital pictures of what's inside the mummy.

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RESTORATION:
In Papua New Guinea,
Beckett helped patch
up the mummy of
Moimango.

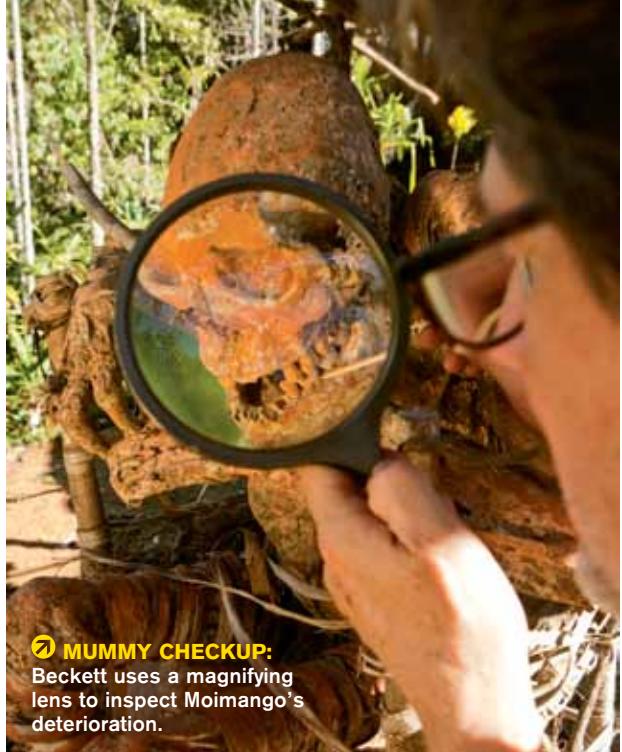
The beauty of using all of these tools together is that we can investigate the entire mummy without destroying it by unwrapping or dissecting it.

How is a mummy made?

Different cultures use different methods. The thing they all have in common is that they stop *decomposition*, or the breakdown of the body's cells. To do that, generally you need to *dessicate*, or dry out, the body.

The ancient Egyptians used *natron*, a type of salt. They would take out the body's heart and guts, and dry out the inside and the organs with it.

In America during the Civil War, it was common for field doctors to replace a dead soldier's blood with a form of arsenic. The arsenic would stop any bacterial growth, preserving the body so it could be transported home for the family to view before burial. It's likely that Abraham Lincoln was mummified this way prior to being buried in May 1865.



MUMMY CHECKUP:
Beckett uses a magnifying
lens to inspect Moimango's
deterioration.

I wanted to teach the villagers how to repair mummies on their own. So together we created a “jungle repair kit.” I relied on their knowledge of their environment to provide the types of things we needed to restore the mummy. We used bark from a tree that grew nearby to tie Moimango's broken bones together. We used sap from another tree to reattach his skin. To remove the lichen that was growing

on his fingers and toes, we used a paste made from a local fruit.

I was lucky enough to get to visit the village again last year and was happy to see that our repairs were holding up quite well!

What can we learn by studying mummies?

Many cultures don't have a written history, so we don't have a record of what their life was like long ago. But mummies are like time travelers.

They can tell us about the past if we know how to listen to their stories.

When people are alive, they breathe air that can bring diseases into their bodies. The work they do can affect where they get arthritis. Social rules dictate what clothes they wear. All these things are preserved when they are mummified. They help us gain a clearer understanding of humankind's journey through time. *

—Stephanie Warren



TEAM EFFORT:
Beckett (left) worked
closely with
Moimango's
son Gemtasu.