

Wes: Our next story takes us on a 200-year-old journey into the virgin wilderness of the Great Plains. Autumn, 1819. A steamship carries a team of explorers into the Missouri river wilderness. They set up camp north of present-day Omaha, Nebraska, before continuing West into the Rocky Mountains. Known as the long expedition, it was mounted just 16 years after Lewis and Clark sought a Northwest passage to the Pacific. But for almost two centuries, important information about the expedition has been lost to history. Evidence was destroyed, and the site of their winter camp, where they did their most important work, remained unknown... until a group of archaeologists stumbled onto a nondescript tract of Midwestern farmland in the spring of 2003. A scientist in Nebraska suspects that artifacts now being found at the site could bring the members of the expedition some long-overdue recognition.

Melissa: I'm really excited about the dig that's going on because this site is really the only physical remnant of the long expedition. People hadn't known where this was for 200 years. The archaeologists might, if we're lucky, be able to find remnants of some of that scientific work that they did.

Wes: I'm Wes Cowan, and I'm in Omaha, Nebraska, to meet Melissa. She wants to evaluate the site for the state's historic preservation board. I'm an appraiser and an auctioneer, but I'm also a trained archaeologist, and I'm very excited that the site of the long expedition may have finally been discovered. Wow, artifacts.

Melissa: Yeah, there's a lot of wonderful, interesting things here. All this stuff is from the site, and many of the artifacts actually place the site with the long expedition. Right here...

Wes: These are period artifacts, and strong evidence the winter camp of the long expedition has been found. What is it that you guys want me to help you with?

Melissa: Well, we need to find out how significant this site is. They found some animal bones on the site. We need to take a look at that and see if that's a bone we just find on any site of this period or if there's something really special about that. Is that something you can help us with?

Wes: Well, probably. I-- I excavated a few thousand animal bones over the course of my career as an archaeologist. I think I can probably help you with that.

Melissa: That would be fantastic.

Wes: At the Nebraska State Historical Society's archaeology lab, I get a look at some of the huge quantity of bones from the site. You know, archaeologists love animal bones from the sites that they excavate. These bones can provide important clues about past hunting practices, about the environment that the animals might have lived in, about the season in which they were collected or hunted. And in our case, these bones from the long expedition might provide important information about exactly what these guys were doing out here. I know about Lewis and Clark, but I'd like to get some more background on the long expedition. In the early 19th century, the United States is expanding by leaps and bounds. In 1803, the Louisiana Purchase almost doubles the size of the country and creates a massive tract of unexplored territory. The government launches expeditions into these new western lands. Lewis and Clark was the earliest and most famous, but in 1819, an army officer named Stephen Long assembles a team of explorers, which, for the first time, includes a cadre of leading scientists. Part of their mission: to study and catalogue the plants, animals, and native inhabitants of the West. So, what kind of scientific work were these guys doing? How important was the long expedition? I'm headed to the Academy of Natural Sciences in Philadelphia to meet Robert Peck, their senior fellow and curator of art and artifacts. So, Bob, what was the significance of the long expedition relative to Lewis and Clark, say? I know it was 15 years later, but...

Robert Peck: It was a much bigger expedition, for one, with a lot more military personnel, but to my mind, the biggest difference was that this expedition had trained scientists along. And as a result, they produced an enormous amount. This is the two-volume report that was issued by the government just within a couple of years of the return of the expedition. It's over 1,000 pages altogether.

Wes: And of course, this is where they were announcing their scientific discoveries, too.

Robert: It was.

Wes: In addition to zoologist Thomas Say and botanist Edwin Jams, Long's team also included artists, such as Samuel Seymour and Titian Peale. When their paintings came back east, they were met with great interest. Among these earliest images of the Great Plains were pictures of Long's dramatic encounters with native tribes. Wow, Oto Council. And this was the first painting of American Indians in the middle of Missouri country.

Robert: The very first. And it is a wonderfully fresh documented image of the event as it took place.

Wes: That is just spectacular.

Robert: It gives you such a sense of being there, doesn't it?

Wes: In the mere nine months spent at their winter camp, the expedition's biologists described 54 entirely new species of plants and animals and documented hundreds of others, a lush picture of biodiversity in Eastern Nebraska in 1820. The team's journals and paintings capture every detail.

Robert: Here, one of the very first depictions of a bison on the open plains.

Wes: Wow.

Robert: What I love about Peale is he's able to go from the very big to the very small. Here, look at these exquisitely detailed cicadas.

Wes: Fabulous.

Robert: One more here.

Wes: Oh, yeah, look at that.

Robert: Sandhill cranes.

Wes: Sandhill crane family. Bob tells me that another key mission of the long expedition was to send plant and animal specimens back east, so scientists could preserve and study them in greater detail. But although the academy has an enormous collection of similar historical material...

Robert: We have about 190,000 specimens of birds here.

Wes: ...they have only a solitary specimen from the long expedition.

Robert: Have to swing that all the way around. And here's the specimen, a greater prairie chicken. It was

collected by Titian Peale on the long expedition in 1820.

Wes: Wow, it's so remarkably well preserved, isn't it? So where are the other specimens from the expedition?

Robert: Well, that's the great tragedy. There may not be any other specimens that have survived.

Wes: What happened?

Robert: All of the specimens that came back were given to Charles Wilson Peale's museum here in Philadelphia and were on display for many years. And then in 1848, that museum was sold. P.T. Barnum. Actually, the great entertainer purchased most of the collections, and then, tragically, lost in a fire two years later. And so the hundreds and hundreds of specimens that the long expedition collected were lost forever.

Wes: Wow, what a tragedy.

Robert: Sadly, this may be the only specimen from the long expedition that we can document.

Wes: Melissa's almost certain the archaeologists are excavating Long's camp, but I want to see for myself. I'm meeting Rob Bozell, the chief archaeologist at the site, to hear more about the work he's doing. The first thing I want to know: how on earth did he find a site that's almost two centuries old? This place was lost for like 200 years, right?

Rob Bozell: That's right, was, no one knew where Long's winter camp was.

Wes: So how in the world did you ever find it?

Rob: One of the expedition members made a painting of it, and it showed the bluff and also where their cabins were, we went up and down the river with a copy of the painting. We did it in the winter so the leaves were down, and there's a really distinctive ravine and a couple bluff tops that matched his painting perfectly.

Wes: So when you found this place, it must have been unbelievably exciting.

Rob: It was remarkable. It was the most fun I've had in doing 25 years of archaeology. Sitting there holding that painting looking at the bluff going, "oh, yeah, it's right there! It's right there!" it was great.

Wes: During their excavation, Rob and his team find themselves in touch, literally, with a long-lost piece of American history: The physical remnants of the day-to-day lives of Long's scientist explorers. So this is the main excavation area?

Rob: Yeah this is the floor of one of the cabins that the scientists were living and working in. There's the fireplace here, and this is the floor area. A lot of artifacts coming out of here: Ceramics, bottle glass, pipes, pipe stems, military buttons, hardware.

Wes: Each of these objects helped Bob confirm that this really was Long's winter camp. His team also found curious artifacts: Tiny fragments of lead, which initially left some in the team scratching their heads. The archaeologists soon figured it out. The fragments were basic tools of the trade for Long's scientists. Rob has asked history enthusiast Dean Slater to do a little demonstration for us.

Dean Slater: Look at all those tiny little holes.

Wes: The tiny lead pellets are known as dust shot. Because they don't cause a lot of physical damage to an animal, they were a favorite collecting tool of Long's scientists. They're another piece of evidence confirming this was the expedition's winter encampment, the place where the scientists did their most important work. Are the bones the team has been finding also connected to the work of the expedition? I hear you guys are also finding lots of animal bones.

Rob: Thousands of them. Some of it's food refuse. Some of it may be from the animals they were collecting as scientific specimens.

Wes: Could the bones help take the place of the scientific material lost in the fire in 1851? It's a tantalizing prospect. I thought it might be fun to do a little excavation work and see what I might find.

Rob: Let's just go down to about this far.

Wes: All right.

Rob: Doesn't look like bone to me.

Wes: Digging a bunch of mounds. Hey, Rob, take a look at this. Just like Rob said, this site is rich with artifacts. Every screenful yields a new batch. Another bone here. Anything found at the site is cleaned and prepared for analysis. Provenance information is kept with each object and then recorded into a database. Rob shows me how he identifies bones from the site.

Rob: It's obviously food remains. Here's a pelvis of a bison or an elk.

Wes: How about these guys?

Rob: Little micro-mammals. Little, tiny rodents there. Look at this example.

Wes: Wow! That is a tiny mandible. Shrew?

Rob: I think it is a shrew, yup.

Wes: Wow, that's great. How about these guys? When he finds a bone he's not familiar with, Rob uses a laboratory collection of skeletons for comparison.

Rob: Here's part of the collection: Some carnivores, goat and sheep, pronghorn antelope. Let's get some of these big birds, see if we can narrow that down.

Wes: So these are basically complete skeletons of animals, right?

Rob: That's right, that's right.

Wes: Rob compared the size, width, and shape of the bone with bones from other large birds until he found a match.

Rob: This is a turkey, wild turkey over here. Clearly that's not it. It's much stouter, shorter, fatter, and it's just a different kind of bone. This is a turkey vulture. Again, the same thing. It's sort of fat and squatty and it just

doesn't look the same. Looks more like some kind of large water bird to me. Let me see the example out of that box.

Wes: Let's see now. And that bone was the perfect fit, a sandhill crane. This obviously is not from a species that the members of the expedition would have been eating, right?

Rob: That's right. I think it's very unlikely this is a food item. It's more related to collecting their scientific specimens.

Wes: That is so cool. You know, I was just in Philadelphia looking at the drawing of the sandhill cranes that Titian Peale did on the expedition. So Rob's team is uncovering evidence of the long expedition's scientific work. It's certainly a fascinating discovery. But just how important is it? My colleague Elyse Luray is heading to Washington, D.C., to meet with Smithsonian Institute research scientist and botanist John Kress.

Elyse: You know, I'm wondering, I know that Long's scientists came back with lots of notes and journals and illustrations. Why would the bones be so important?

John Kress: Well, the bones, like any of the natural-history specimens that we have, are the physical representation of the species. They contain a lot of information in terms of their structure, in terms of their form, in terms of their morphology.

Elyse: And what can we learn from the bones?

John: If we do the right experiments and we have the right techniques, we can tell what the animals were eating, we can tell what the population sizes were, how old these particular animals were. We can also tell something about the health of the animals and even some of the diseases they may have had.

Wes: What John tells Elyse next puts the long expedition into some real perspective. I'm headed back to the lab to tell Melissa everything I've discovered. I tell Melissa the animal bones that Rob Bozell is finding can give scientists a window on a long-lost world. And you were exactly right. It was the animal bones that were the key to the whole story.

John: The bones give us a perfect snapshot of the environment 200 years ago. And we can take those bones and that information, and then compare it to a similar snapshot of today and understand something about what's happened to the environment, primarily through the impact of humans over that 200-year span.

Elyse: The findings of the long scientists seem very underrated.

John: Certainly it's been underrated. It's been overlooked. The beauty of the long expedition was it was in one place for a considerable amount of time. Lewis and Clark collected a lot of specimens, but they collected them through space, whereas the long expedition, being in that area for nine to ten months, they were able to actually collect a lot more organisms and look at a lot more population structure than any of the Lewis and Clark expeditions could. They are on an even playing field in terms of what they can tell us about the environment.

Wes: Well, listen, I want to thank you for getting me back in the dirt.



**Episode 11, 2005: Long Expedition,
Omaha, Nebraska**

Melissa: No, thank you. You helped us put the significance of this site into context and make us understand why it's important.

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