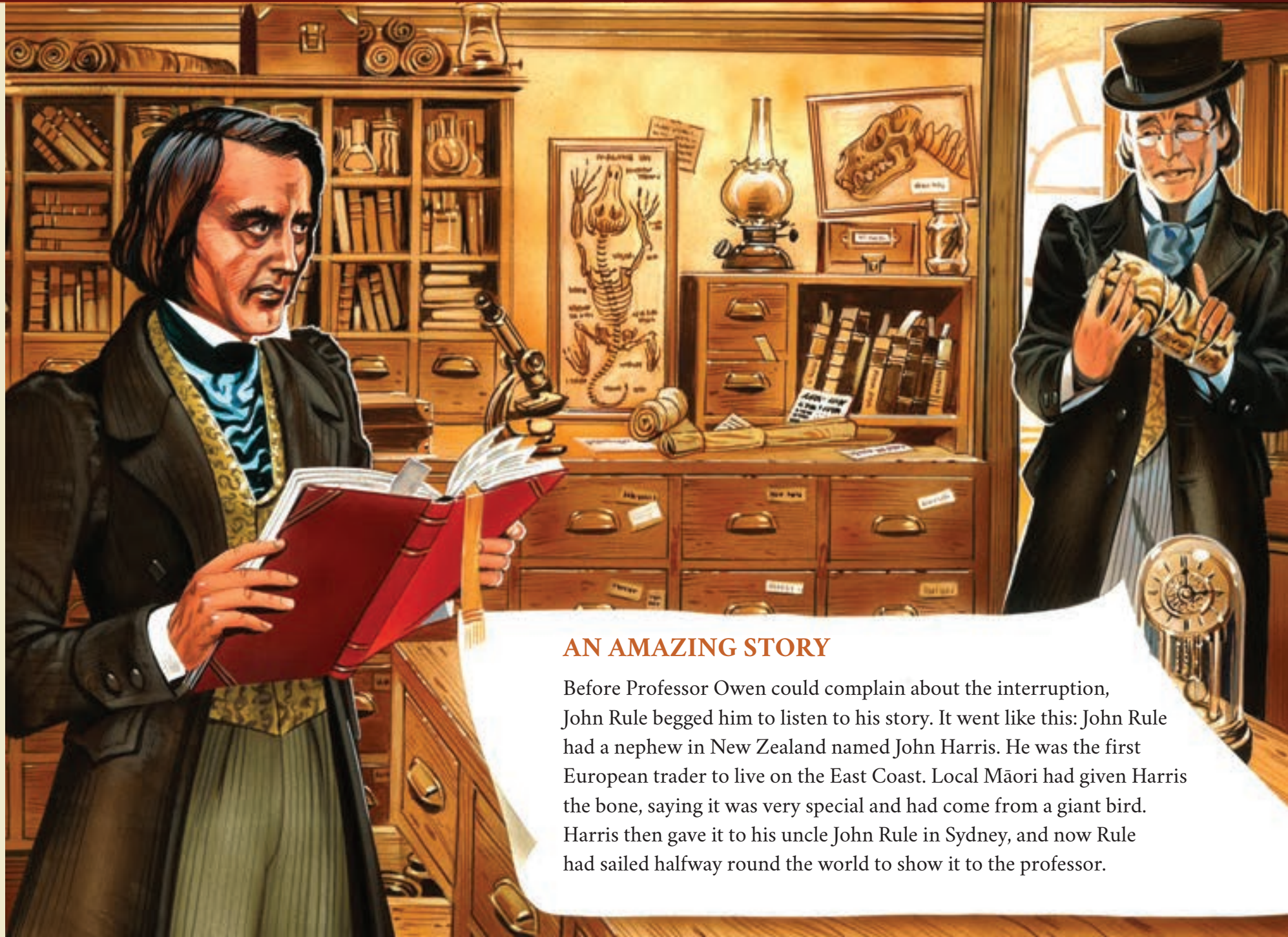


# RICHARD OWEN'S GIANT MYSTERY

by Quinn Berentson

It all began when a man appeared in the doorway of Professor Richard Owen's laboratory. The visitor was carrying a mysterious piece of bone, and he was determined to show it to the professor. The date was 18 October 1839. The place was London, England.

Richard Owen was famous for three things: he was the world expert on the remains of exotic animals, he was very bad tempered, and he sometimes claimed other people's work as his own. Maybe it wasn't such a good idea to interrupt him, but the visitor - whose name was John Rule - did it anyway. After all, he had come a long way ... all the way from Sydney, Australia. John Rule's piece of bone, wrapped in tatty brown paper, had come even farther. It had been found on the East Coast of the North Island of New Zealand, and it came with an amazing story ...



## AN AMAZING STORY

Before Professor Owen could complain about the interruption, John Rule begged him to listen to his story. It went like this: John Rule had a nephew in New Zealand named John Harris. He was the first European trader to live on the East Coast. Local Māori had given Harris the bone, saying it was very special and had come from a giant bird. Harris then gave it to his uncle John Rule in Sydney, and now Rule had sailed halfway round the world to show it to the professor.



## WASTE OF TIME

Richard Owen took a quick glance at the bone and told John Rule that he had wasted his time. It was far too big and thick to have come from a bird. The bone was clearly the middle section of a thigh bone, with both ends snapped off. In Owen's opinion, the **femur** had belonged to a cow.

It seemed that John Rule had come a long way for nothing. But he wasn't about to give up so easily. He knew a thing or two about animal **anatomy** himself. Rule pointed out something he thought was significant. The inside of the bone looked like a honeycomb. There is only one kind of animal that has bones like this: a bird. Cow bones, like those of other mammals, are hollow and filled with **marrow**.

John Rule was right, and Richard Owen knew it. Despite its large size, the mystery bone *did* look like it was from a bird. The professor was interested. How could he not be? He told John Rule that he would study it more closely.

## LIKE NO OTHER ANIMAL

Remember that this was only 1839. Richard Owen had none of the technology that scientists have today. He had no computers, scanners, or cameras – and he certainly didn't have the Internet on which to look things up. Owen had no idea what **DNA** was either. There was only one thing that he could do to identify the mystery bone: compare it with other bones.

This cross-section of a bird bone shows the honeycomb structure that is unique to birds.



Luckily, the professor was in charge of the biggest bone collection in the world – the famous Hunterian Collection. The collection filled an entire museum and contained the bones of thousands of animals from all over the planet. That night, Owen stayed up late. First he compared John Rule's bone with the bones from farm animals in New Zealand. Then he looked at stranger, more exotic bones. These belonged to mammals from Africa, Asia, and Australia. But the bone didn't match any of them. Whatever creature it had belonged to, it was like no other animal on Earth.





Finally, after hours of work, Owen had a breakthrough. As he was rechecking the collection's African section, he saw that the mystery bone looked similar to the leg bone of an ostrich – only it was much bigger. The more Owen compared the two bones, the more convinced he became that John Rule, his nephew John Harris, and East Coast Māori were right. Some kind of gigantic bird *had* once lived in New Zealand. And it was now the biggest bird ever known to science.

## NOT IMPRESSED

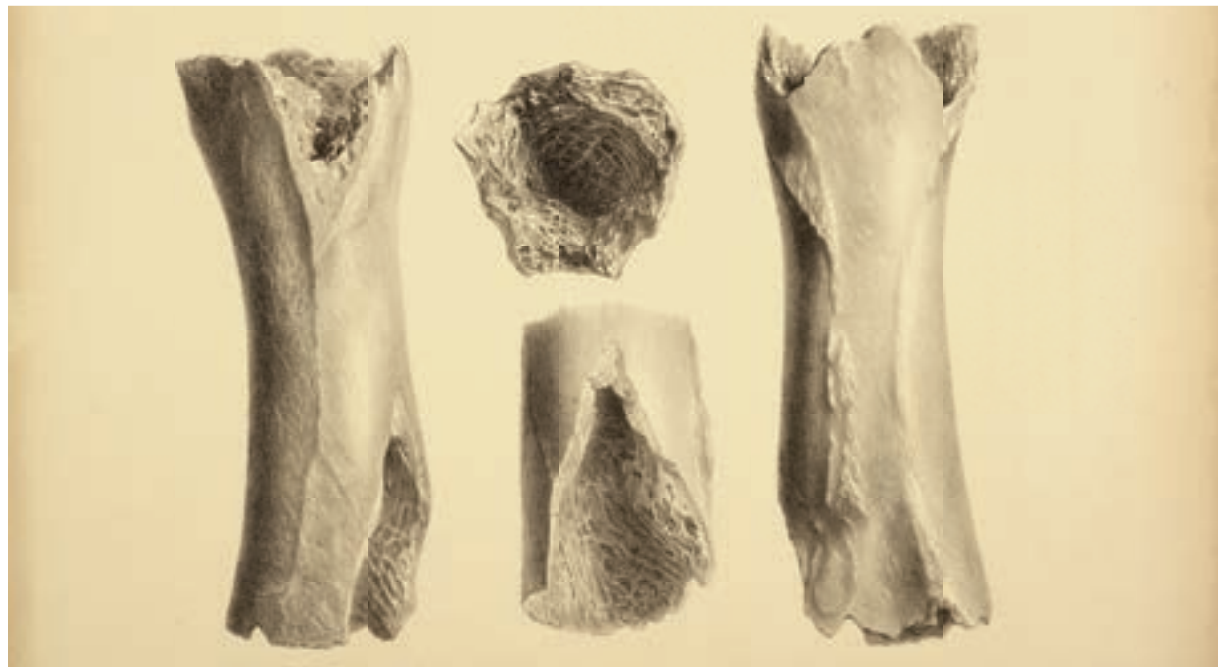
Richard Owen was eager to share this amazing discovery. The next week, he took the bone to a meeting of the Royal Zoological Society. These were the most important animal scientists in England. But they were not impressed. The biggest bird in the *world*? Really? Where was the professor's evidence ... because as far as they were concerned, this one piece of broken bone wasn't it. The scientists had other questions too.



If the world's biggest bird lived in New Zealand, surely more people would know about it. Many Europeans had visited the islands since Captain Cook in 1769. Some of them had been scientists, and they had studied the country's unique native animals, most of which were birds. They had also talked to Māori, who were experts on every living bird in the land. Visitors had heard stories about taniwha and monsters of the forest. But they'd never been told about giant birds.

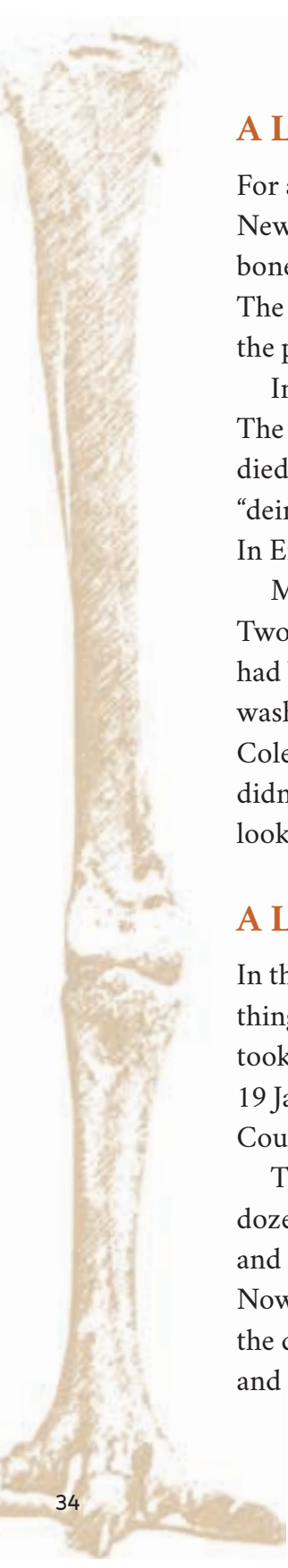
There was another thing. How could such a huge animal end up in such an isolated place? Why would it only be on a few islands in the South Pacific? All the other large flightless birds lived on continents. The ostrich lived across all of Africa. The rhea roamed South America, and Australia was home to the emu and the cassowary. None of these birds could fly or swim, so how could a similar species make it all the way to New Zealand?

Richard Owen couldn't prove his theory. And because the bone was only a piece of whatever creature it had belonged to, he wasn't allowed to give it an official name. All Owen could do was hope that someone, somewhere, would find more evidence of this mystery giant.



By the end of 1839, Richard Owen had already published an article about his giant-bird theory in a scientific magazine. These drawings of the piece of bone from John Rule were published alongside the article.





## A LONG WAIT

For almost four years, Richard Owen heard nothing from New Zealand. But he was kept busy. People had been finding the bones of huge **prehistoric** creatures in quarries all over England. The bones were many shapes and sizes, but after much careful study, the professor said they belonged to the same group of animals.

In April 1842, Richard Owen made a major announcement: The ancient bones belonged to giant reptiles that had lived and died out millions of years ago. Owen combined the Greek words “deinos” and “sauros” to give the reptiles their scientific name. In English, it meant “fearsome lizard”. We know them as dinosaurs.

Meanwhile, there had been a development back in New Zealand. Two English **missionaries**, William Colenso and William Williams, had been given a collection of large bones. The bones had been washed from riverbanks after a flood and found by East Coast Māori. Colenso and Williams knew about Richard Owen – although they didn’t know about his giant-bird theory. They thought the bones looked important, and they decided to send them to the professor.

## A LONG JOURNEY

In the 1800s, New Zealand was an isolated place. The only way to get things across the world was by sailing ship. This dangerous journey took three months. The bone collection finally arrived in England on 19 January 1843. Owen had been expecting it, and he was nervous. Could this be the evidence that proved him right?

The professor opened the boxes and was amazed. There were dozens of bones. Some were huge – a metre long. Others were whole and in perfect condition. This was everything Owen could ask for! Now no one could doubt the giant bird of New Zealand. Very soon, the discovery was huge news. People all over Europe read about it, and Richard Owen became even more famous.

This photograph, which was taken in 1879, became one of the most famous images of the nineteenth century. In his right hand, Richard Owen holds the piece of femur that had been given to him by John Rule forty years earlier.



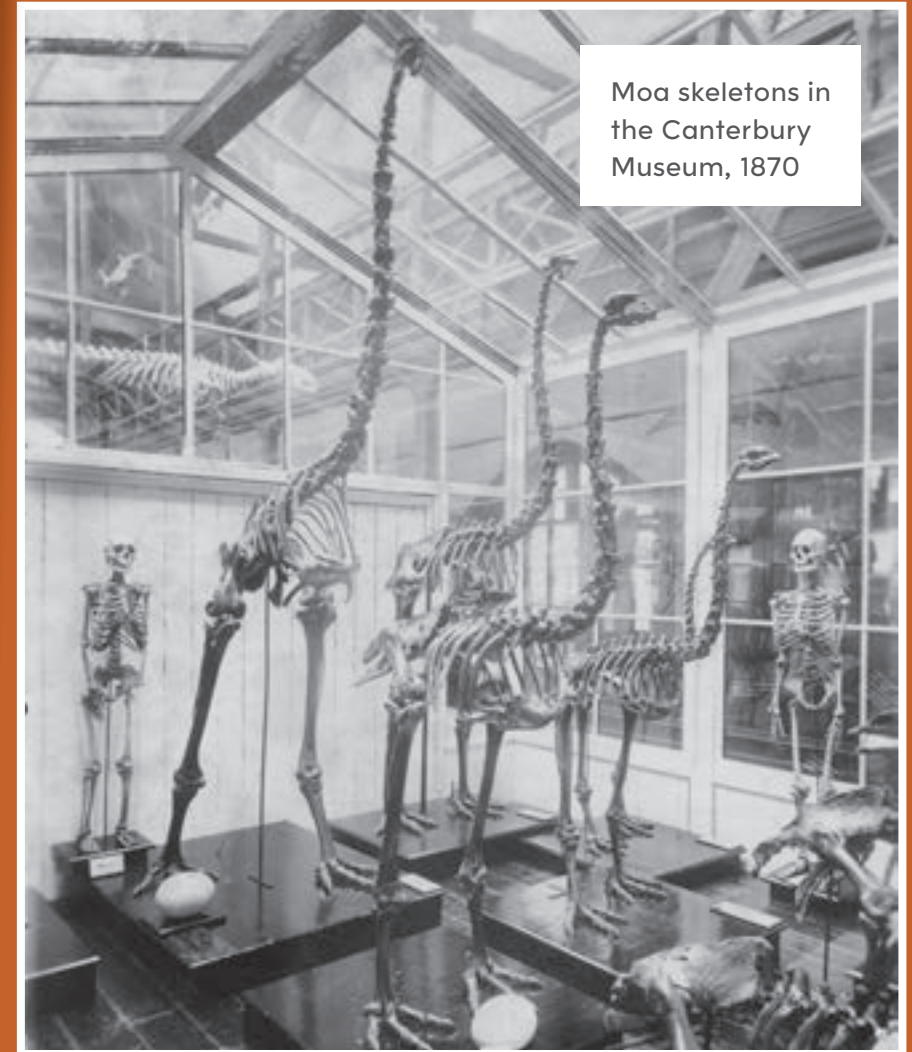


## A GREAT SCIENTIST

Despite Richard Owen's first thoughts about the bone all those years ago, he kept an open mind and he persisted. These were two qualities that made him a great scientist. Owen used scientific observation and then patiently waited for enough evidence to prove his theory: New Zealand *was* once home to the largest bird ever known.

Now that he had evidence, Owen could finally give the giant bird its scientific name. He again chose "deinos" and combined it with the Greek "ornis" meaning "bird". Owen also used the Latin "novaezealandiae", referring to where the bird had once lived. *Dinornis novaezealandiae* – the "fearsome bird of New Zealand" – was now official.

We're still amazed by this giant creature that once shared our home, although few people know its scientific name. Of course Māori knew the bird well and had named it centuries earlier. It's the name we still use today: the moa.



## GLOSSARY

- anatomy:** body structure
- DNA:** (short for deoxyribonucleic acid) the genetic information inside cells that determines how a living thing will look and function
- femur:** a thigh bone
- marrow:** the soft, fatty substance inside a bone
- missionary:** a person who travels to spread their religious beliefs
- prehistoric:** very long ago, before history was written down

# Richard Owen's Giant Mystery

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illustrations by Spike Wademan

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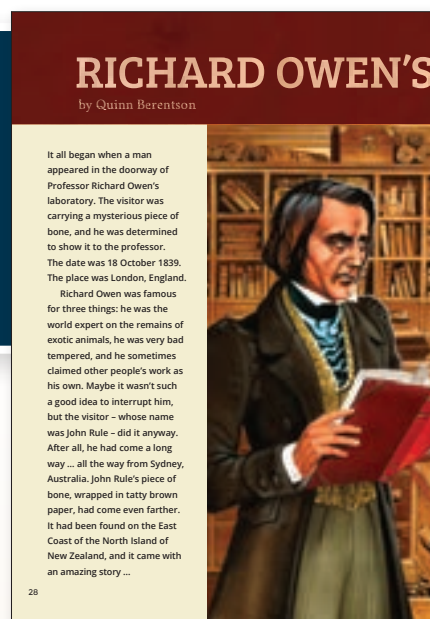
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