

Feathered dinosaur could probably fly, but unlike any bird of today

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With this Archaeopteryx specimen, imprints from plumage can be seen near the shoulder and the tail's tip. Photo by: Pascal Goetgheluck/ESRF.

About 150 million years ago, a bird-like dinosaur used to run on the ground, flap its wings, and take off. It flew unlike any animal we know today, scientists say.

Scientists call the creature "Archaeopteryx," which means "old wing."

They have been studying the fossil of this creature for over 150 years. Fossils are the remains of plants and animals from long ago. Many fossils are preserved bones or shells.

In 1861, a German scientist wrote about the unusual dinosaur fossil. What appeared to be a bird feather was pressed into the rock. The scientist thought it was fake.

He had the first hint about something that scientists now know. It's that dinosaurs are related to modern-day birds.

Having Feathers Doesn't Mean One Can Fly

During the next 150 years, 10 more Archaeopteryx skeletons were discovered. The dinosaur was about the size of a crow. It weighed little more than a pound and was covered in feathers. Still, having feathers does not necessarily mean one can fly. Just ask the penguin and ostrich.

The new report suggests that Archaeopteryx probably did flap through the air. Scientists had not confirmed this before. In fact, they've been arguing about it for quite some time.

Unlike birds today, Archaeopteryx flapped more from its shoulders, the report says. Imagine how a butterfly flaps its wings, says Dennis Voeten. He's a researcher in France and helped lead the study.

Likely Not A Direct Family Member Of Today's Birds

Back when dinosaurs roamed the Earth, not everything that looked like a bird was a bird. Many creatures back then had feathers, but could not fly. Archaeopteryx was probably not a direct family member of today's sparrows and ostriches, Voeten said. It probably belonged to a different group of animals.

In recent years, as scientists have explored Archaeopteryx's background, some weren't sure it ever flew. Some believed it scrambled up trees using its clawed wings. Then, maybe it let go, and used its wings to sail to the ground, kind of like a flying squirrel.

In the new study, Voeten and his team examined Archaeopteryx fossils using a synchrotron machine. It is sort of like an X-ray machine, but much more powerful. It uses radiation waves to take pictures of objects.

Bones, Voeten says, are like records of our everyday actions. They show what we did. "The right upper arm bone of a professional tennis player is thicker than the left upper arm bone," he said. Similarly, when birds fly, the stress of flying shows up on their bones. Voeten wondered if there were similar clues in Archaeopteryx fossils.

Bones Similar To Those Of "Burst Fliers"

The study authors looked at sections of the Archaeopteryx bones. They compared these to bones in flying birds, flightless birds, other dinosaurs, and even modern dino-like reptiles, such as crocodiles.

The Archaeopteryx bones reminded Voeten of "burst fliers." These are birds like pheasants, roadrunners, and turkeys. Such animals are comfortable on the ground, but can also take flight with a snap of the wings. The study concludes that Archaeopteryx was probably this type of flier.

"Incapable Of Flying Like A Modern Bird"

Still, it did not fly like a pheasant. In modern birds, the muscle groups that move wings up and down are attached at the middle of the ribcage. However, if you flap your arms to mimic a bird, you use muscles that are connected at the chest and shoulders. Archaeopteryx wings were attached like our human arms. "We're sure that it's incapable of flying like a modern bird does," he said.

Voeten expects that the new study will be criticized and questioned. He says, "I warmly welcome them." He said he is not totally attached to the idea Archaeopteryx could fly, he said. "This is a very famous, notorious debate that I am entering in as a new guy."