A microscopic examination of fossils from China has revealed that the fur-like body covering of pterosaurs, the remarkable flying reptiles that lived alongside dinosaurs, was actually made up of rudimentary feathers.

The surprising discovery described by scientists on Monday means that dinosaurs and their bird descendants were not the only creatures to boast feathers and that feathers likely appeared much longer ago than previously known. Pterosaurs were only distantly related to dinosaurs and birds.

Birds need feathers to fly. That was not the case with pterosaurs. Short, hair-like feathers covered their bodies and wings but lacked the strong central shaft of avian flight feathers, the researchers said. They may have provided insulation and other benefits, as hair does for mammals.

“They were not flight feathers,” said paleontologist Baoyu Jiang of Nanjing University, who led the research published in the journal *Nature Ecology & Evolution*. “They looked fuzzy, and they didn’t have complicated feathers.”

The researchers examined beautifully preserved Jurassic Period fossils roughly 160 to 165 million years old of two small pterosaurs called anurognathids from China. Apparently forest dwellers and insect eaters, they possessed 18-inch wingspans, short tails and superficially frog-like faces.

Pterosaurs were the first vertebrates to master flight, followed much later by birds and bats. Scientists have long known that pterosaurs had a fur-like body covering and there has been a long-running scientific debate about how to classify it.

Many of the filaments, under the microscope, showed branching like in feathers but not hair.

“We feel the simplest thing for the present is to call them all feathers because they show branching, the fundamental distinguishing character of a feather,” study co-author Mike Benton said.