

Scientists Discover One of World's Oldest Bird Species at Waipara, New Zealand

Toothed Fossil Find Rewrites History of Seabird Family

CHRISTCHURCH, CANTERBURY, NEW ZEALAND, September 17, 2019 /EINPresswire.com/ -- The ancestor of some of the largest flying birds ever has been found in Waipara, New Zealand.

Bony-toothed birds (Pelagornithids), an ancient family of huge seafaring birds, were thought to have evolved in the Northern Hemisphere – but that theory has been upended by the discovery of the family's oldest, but smallest member in New Zealand.

At 62 million-years-old, the newly-discovered 'Protodontoptyx ruthae', is one of the oldest named bird species in the world. It lived in New Zealand soon after the dinosaurs died out.



Protodontoptyx ruthae. Illustration by Derek Onley. Image Available CC BY NC and for News and Current Affairs Use

While its descendants were some of the biggest flying birds ever, with wingspans of more than 5 metres, 'Protodontoptyx' was only the size of an average gull. Like other members of its family, the seabird had bony, tooth-like projections on the edge of its beak.

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Dr Paul Scofield

The seabird fossil was identified by the same team that recently announced the discovery of a 1.6 metre-high giant penguin from the same site.

Amateur palaeontologist Leigh Love found the partial 'Protodontoptyx' skeleton last year at the Waipara Greensand fossil site. The bird was named 'Protodontoptyx ruthae' after Love's wife Ruth. Love

wanted to thank her for tolerating his decades-long passion for palaeontology.

Fellow amateur Alan Mannering prepared the bones, and a team comprising Love, Mannering, Canterbury Museum Curators Dr Paul Scofield and Dr Vanesa De Pietri and Dr Gerald Mayr of Senckenberg Research Institute and Natural History Museum in Frankfurt, Germany, described 'Protodontoptyx'.

Dr Scofield says the age of the fossilised bones suggests pelagornithids evolved in the Southern Hemisphere. “While this bird was relatively small, the impact of its discovery is hugely significant

in our understanding of this family. Until we found this skeleton, all the really old pelagornithids had been found in the Northern Hemisphere, so everyone thought they'd evolved up there."

"New Zealand was a very different place when 'Protodontopteryx' were in the skies. It had a tropical climate - the sea temperature was about 25 degrees so we had corals and giant turtles," he adds.

Dr Mayr says the discovery of 'Protodontopteryx' was "truly amazing and unexpected. Not only is the fossil one of the most complete specimens of a pseudotoothed bird, but it also shows a number of unexpected skeletal features that contribute to a better understanding of the evolution of these enigmatic birds."

Later pelagornithid species evolved to soar over oceans with some species measuring up to 6.4 metres across the wings. 'Protodontopteryx's' skeleton suggests it was less suited for long-distance soaring than later pelagornithids and probably covered much shorter ranges. Its short, broad pseudoteeth were likely designed for catching fish. Later species had needle-like pseudoteeth which were likely used to catch soft-bodied prey like squid.

Dr De Pietri says "because 'Protodontopteryx' was less adapted to sustained soaring than other known pelagornithids, we can now say that pseudoteeth evolved before these birds became highly specialised gliders."

The last pelagornithid species died out around 2.5 million years ago, just before modern humans evolved.

The Waipara Greensand site where the 'Protodontopteryx' skeleton was found has yielded several important scientific discoveries in recent years, including ancient penguins and the world's oldest tropicbird fossil.

Some of these discoveries, including the 'Protodontopteryx' fossil, will be displayed in an exhibition about ancient New Zealand at the Museum later this year.



Dr Paul Scofield and amateur palaeontologist Leigh Love examine a section of riverbank on the Waipara River, near where the Protodontopteryx fossil was found. Image Available CC BY NC and for News and Current Affairs Use



'Protodontopteryx' fossil showing the bony, tooth-like projections on the bird's beak. Image Available CC BY NC and for News and Current Affairs Use

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