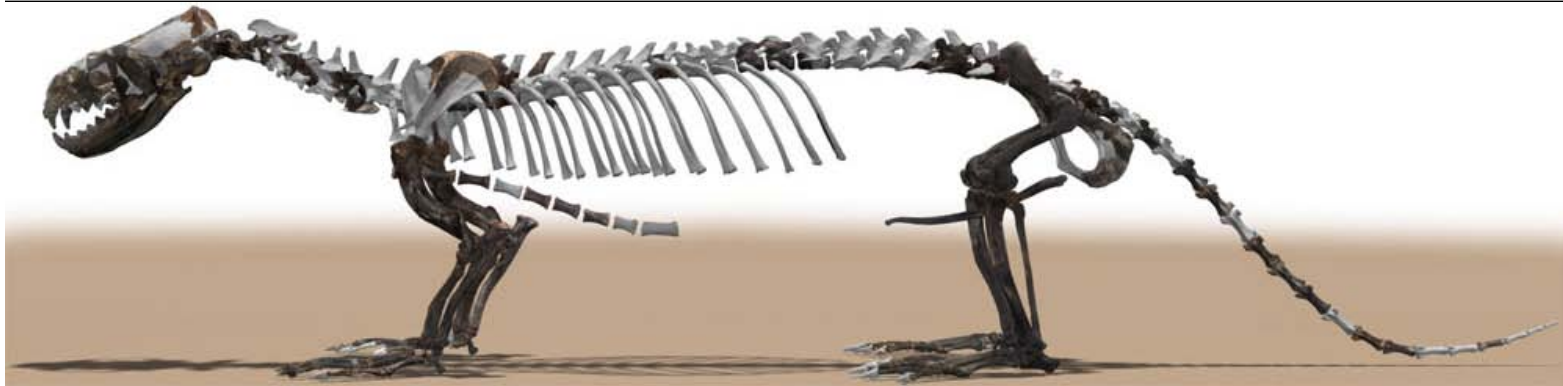


Arctic discovery provides 'missing link' for seals



by Michel Comte
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Scientists in Canada have found a "missing link" in the early evolution of seals from land mammals to the marine carnivores we see today.

Paleontologists working in Canada's remote north have discovered a skeleton in an ancient Arctic lake bed that has given them a glance of the animal's land-to-sea transition, which had been difficult to study because of a lack of fossil evidence.

The find offers the "first glimpse into the earliest stages of this important evolutionary transition," lead researcher Natalia Rybczynski said.

It has also helped the team refute the prevailing theory that seals evolved on North America's northwest shores, and suggests that their large eyes were adapted to hunt in dark Arctic winters, not low light deep sea diving.

"It changes our thinking about how and where the evolution of this animal took place," Rybczynski, a paleontologist at Carleton University in Ottawa, told AFP.

"We knew that pinnipeds (seals, sea lions and walruses) came from a terrestrial ancestor, but we had no idea how that land-to-sea transition occurred," or where, she explained.

"If it was in the high Arctic, then we also have to consider the Arctic and the conditions there as contributing to its evolution."

The fossil skeleton, thought to be 20 to 24 million years old, was found in 2007 during an expedition to a meteor impact crater that once formed a lake on Devon Island, Nunavut.

Past expeditions to the crater had uncovered remains of rabbits, freshwater fish, a bird, a shrew, a rhinoceros and a small hoofed mammal that once lived in the then cool temperate climate.

Researchers believe the light conditions for the seal ancestor would have been similar to today with 24-hour darkness for part of the year and 24-hour daylight for most of the remainder.

Rybczynski's team happened upon the exact spot of the seal ancestor's bones after their all-terrain vehicle ran out of fuel, Rybczynski said. Within two days they had dug up 65 percent of the skeleton while waiting for fuel.

"There's always an element of chance in paleontology," Rybczynski quipped.



Puijila darwini

The so-called "walking seal" was named "Puijila darwini," meaning young sea mammal in Inuktitut -- the language of the Inuit people -- and in homage to Charles Darwin.

It had a body resembling that of an otter with the head of a seal, with legs, a long tail and webbed feet adapted for swimming, according to Canadian and US researchers.

It was "the least specialized for swimming" of its known peers, a study to appear in the April 23 edition of the journal Nature said.

"The presence of enlarged, probably webbed feet, robust forelimbs and an unspecialized tail suggests that Puijila swam quadrupedally using its webbed fore and hind feet for propulsion," said the study.

"It was almost certainly not specialized for swimming under water using simultaneous pelvic paddling," like modern seals that oscillate their hind feet side to side or their fore flippers in a movement akin to flying.

It predominantly lived and hunted in freshwater lakes that would freeze over in the winter.

But early populations may also have frequented marine shore environments more than their counterparts based further south, because a warmer Arctic Ocean would have remained open when access to lakes was restricted by ice cover.



Paleontologist Natalia Rybczynski