A new species of horned dinosaur was announced today by an international team of scientists led by Alf Museum staff, 95 years after the initial discovery of the fossil.

The animal, named *Spinops sternbergorum*, lived approximately 76 million years ago in southern Alberta, Canada. *Spinops* was a plant-eater that weighed around two tons when alive, a smaller cousin of *Triceratops*. A single large horn projected from the top of the nose, and a bony neck frill sported at least two long, backward-projecting spikes as well as two forward-curving hooks. These unique structures distinguish *Spinops* from related horned dinosaurs.

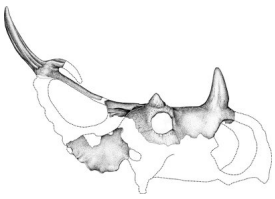
“I was amazed to learn the story behind these specimens, and how they went unstudied for so long,” said Andrew Farke, Augustyn Family Curator of Paleontology at the Raymond M. Alf Museum of Paleontology, and lead author on the study naming *Spinops*. “This animal is an important addition to our understanding of horned dinosaur diversity and evolution,” Farke continued.

Parts of the skulls of at least two *Spinops* were discovered in 1916 by Charles H. and Levi Sternberg, a father-and-son fossil collecting team. The Sternbergs recognized that their find represented a new species and sent the fossils to The Natural History Museum (London). However, the fossils were deemed too scrappy for exhibit, and consequently were shelved for decades. It wasn’t until Farke and colleagues recognized the importance of the fossil that the bones were finally cleaned for study.

“This study highlights the importance of museum collections for understanding the history of our planet,” commented Farke. “My colleagues and I were pleasantly surprised to find these fossils on the museum shelf, and even more astonished when we determined that they were a

previously unknown species of dinosaur."

The name *Spinops sternbergorum* (pronounced "SPIN-ops stern-berg-OR-uhm") means "Sternbergs' spine face", referring to the headgear of the animal and honoring the original discoverers of the fossil. Although the face of *Spinops* is similar to its close relatives *Centrosaurus* and *Styracosaurus*, the unique anatomy of the bony neck frill gives scientists better insight into how this structure evolved. In particular, the fossils of *Spinops* clarify the identification of the long frill spikes common in some horned dinosaurs. Previously, scientists had inferred that these spikes evolved only once in the group. Careful study of *Spinops*, however, suggests that its spikes are located in a different position from that seen in most other horned dinosaurs, implying that the structures evolved independently. This finding allows a more accurate reconstruction of evolutionary relationships, and is being tested with additional study.



Along with Andrew Farke, an international team of paleontologists collaborated on the project, including Michael Ryan (Cleveland Museum of Natural History), Paul Barrett and Mark Graham (Natural History Museum, London), Darren Tanke and Dennis Braman (Royal Tyrrell Museum of Paleontology), and Mark Loewen (Natural History Museum of Utah). The research was funded in part by the National Science Foundation, and the paper formally naming *Spinops* app ears in the December issue of the journal *Acta Palaeontologica Polonica.*

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