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ARCTIC EDMONTOSAURUS LIVES AGAIN – A NEW LOOK AT THE “CARIBOU OF THE CRETACEOUS”

DALLAS, TEXAS (May 6, 2020) – A new study by an international team from the Perot Museum of Nature and Science in Dallas and Hokkaido University and Okayama University of Science in Japan further explores the proliferation of the most commonly occurring duck-billed dinosaur of the ancient Arctic as the genus *Edmontosaurus*. The findings also reinforce that the hadrosaurs – known as the “caribou of the Cretaceous” – had a huge geographical distribution of approximately 60 degrees of latitude, spanning the North American West from Alaska to Colorado.

The scientific paper describing the find – titled “Re-examination of the cranial osteology of the Arctic Alaskan hadrosaurine with implications for its taxonomic status” – has been posted in **PLOS ONE**, an international, peer-reviewed, open-access online publication featuring reports on primary research from all scientific disciplines. The authors of the report are Ryuji Takasaki of Okayama University of Science in Japan; Anthony R. Fiorillo, Ph.D. and Ronald S. Tykoski, Ph.D. of the Perot Museum of Nature and Science in Dallas, Texas; and Yoshitsugu Kobayashi, Ph.D. of Hokkaido University Museum in Japan. To read the entire manuscript and view renderings, go to <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0232410>.

“Recent studies have identified new species of hadrosaurs in Alaska, but our research shows that these Arctic hadrosaurs actually belong to the genus *Edmontosaurus*, an abundant and previously recognized genus of duck-billed dinosaur known from Alberta south to Colorado,” said Takasaki.

The report states that anatomical comparisons and phylogenetic analyses clearly demonstrate that attribution of the Alaskan hadrosaurines to a unique genus *Ugrunaaluk* is inappropriate, and they are now considered as a junior synonym of *Edmontosaurus*, a hadrosaurines genus previously known from lower latitude North America roughly in between northern Colorado (N40°) to southern Alberta (N53°).

The fossils used for this study were found primarily in the Liscomb Bonebed, Prince Creek Formation of the North Slope of Alaska, the location of the first dinosaur fossils discovered in the Arctic.

The team’s research also show that the plant-eating hadrosaurs were taking over parts of North America during the Cretaceous, suggesting that *Edmontosaurus* was likely an ecological generalist.

“In other words, *Edmontosaurus* was a highly successful dinosaur that could adapt to a wide variety of environmental conditions,” said Fiorillo. “It’s not unrealistic to compare them to generalized animals today – such as mountain sheep, wolves and cougars in terms of their range and numbers – that also roam greater geographic distributions.”

Members of this team also found ties to *Kamuysaurus japonicus*, a new genus species they discovered near Hokkaido, Japan, and named in 2019.

“Combined with the newly named *Kamuysaurus* of Japan, Alaska *Edmontosaurus* shows that this group of hadrosaurs, the Edmontosaurini, were widely distributed in the northern circum-Pacific region, meaning that they were incredibly successful dinosaurs,” said Kobayashi. “It’s fascinating to think they likely used the ancestral Bering Land Bridge between Asia and North America for migration in a manner similar to mammoths, woolly rhinoceroses and early humans.”

Edmontosaurus belong to a clade Edmontosaurini as *Kamuysaurus*, a recently described hadrosaurine dinosaur from Japan, suggesting that Edmontosaurini widely distributed along the northern circum-Pacific region. North America and Asia were connected by Beringia during the Late Cretaceous, and some dinosaurs are believed to have traveled to the North American continent this way. Edmontosaurini is one of the dinosaur groups that may have ventured the North America-to-Asia pathway and adapted to the Arctic environment. Those creatures that stayed in North America evolved to *Edmontosaurus*, and those that stayed in Asia and moved on to Japan are believed to have evolved to *Kamuysaurus*.

“This study is a wonderful example of why paleontologists need to be more aware of how individual growth and life stage of fossils matter when we try to interpret the anatomical features preserved in them. If you don’t, you run the risk of erroneously erecting a new ‘genus’ or species based on juvenile traits that will change or vanish as the individual creature grows up – and winds up being an adult of an already-known ‘genus’ or species!,” said Tykoski. “Our study shows that was probably the case with these juvenile duck-billed dinosaurs from the ancient Arctic of Alaska.”

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About the Perot Museum of Nature and Science. *The top cultural attraction in Dallas/Fort Worth and a Michelin Green Guide three-star destination, the Perot Museum of Nature and Science is a nonprofit educational organization located in the heart of Dallas, Texas. With a mission to inspire minds through nature and science, the Perot Museum delivers exciting, engaging and innovative visitor and outreach experiences through its education, exhibition, and research and collections programming for children, students, teachers, families and life-long learners. The 180,000-square-foot facility in Victory Park opened in December 2012 and is now recognized as the symbolic gateway to the Dallas Arts District. Future scientists, mathematicians and engineers will find inspiration and enlightenment through 11 permanent exhibit halls on five floors of public space; a children’s museum; a state-of-the art traveling exhibition hall; and The Hoglund Foundation Theater. Designed by 2005 Pritzker Architecture Prize Laureate Thom Mayne and his firm Morphosis Architects, the museum has been lauded for its artistry and sustainability. To learn more, please visit perotmuseum.org.*

About Hokkaido University. *Hokkaido University is home to some 4 million specimens and documents that have been gathered, preserved and studied since the Sapporo Agricultural College began more than 130 years ago. Amongst these are more than 10,000 precious “type specimens” that form the basis for the discovery and certification of new species. Opened in the spring of 1999, the Hokkaido University Museum conveys the diverse range of research carried out at Hokkaido University while also using various original materials and visual media to introduce the university’s cutting-edge research.*

Okayama University of Science. *Okayama University of Science carries a various scientific departments more than 5000 students are enrolled every year. The university recently opened a new course for studying paleontology in 2014 and renovated a dinosaur museum in this April. Dinosaur research projects at the Okayama University of Science are appointed to one of the selective projects of the Japanese Ministry of Education, Culture, Sports, Science and Technology, and the University is now known as one of the key institutions for dinosaur researches in Japan.*