

DK IMAGES

HEADS UP

When corythosaurus, below and left, goes on display at the ROM next month, the 90-kilogram skull won't be part of the exhibit. Paleontologist David Evans wants a closer look. Corythosaurus — which means Corinthian helmet lizard — had a head crest

containing elongated nasal passages. When it inhaled, air went through its nostrils, looped through the crest, down into its mouth and then into the airway. "It's an extremely bizarre, bizarre thing," says Evans, who hopes to figure out what it was used for.

THE ROM'S TOP 10

MAIASAURA:

This Cretaceous plant eater was found buried in rock with an infant. It is considered the best specimen in the world, because of the structure of the beak and the impression of skin found in the rock.

CORYTHOSAURUS:

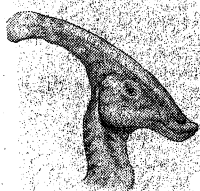
The skeleton, collected in 1919 by William Parks, the ROM's first director of paleontology, is almost 75 per cent real fossil and includes a 90-kilogram, three-dimensional head.

ARRHINOCERATOPS:

There are only two specimens of this close cousin of triceratops in the world, and the ROM has both. It includes the holotype, which is a single physical example or illustration of this rare horned dinosaur.

PARASAUROLOPHUS:

A rare and distinctive crested duckbill and the ROM's most famous dinosaur specimen, which appears (in plaster casts of its bones) in almost every major dinosaur museum in the world.



BAROSAURUS:

This is the only real sauropod skeleton to be mounted in Canada, the largest on display in Canada, and the only real fossil Barosaurus mounted in the world. When alive, it would have weighed about 15,000 kilograms and stretched 24 metres.



PARKOSAURUS:

Named in honour of the original director of the Royal Ontario Museum of Paleontology, this is an almost complete skeleton of a rare type of small, bipedal plant-eating dinosaur, the only known example in the world.

GRYPOSAURUS:

This haplotype of the duck-billed species Gryposaurus incurvimanus is more than 70 per cent real fossilized bone. It was the first dinosaur Parks ever collected for the ROM in 1918.

TRICERATOPS:

An excellently preserved, almost complete subadult skull.

CHAMOSAURUS:

The feature skeleton of a large horned-dinosaur display.

ALBERTOSAURUS:

A close cousin of T-Rex, it is displayed in relief for the first time, and has been remounted in a more accurate pose.

Evolution of a dinosaur

KIM HONEY
TORONTO STAR

Corythosaurus sure gets around. Way back in the Cretaceous period, about 75 million years ago, the duck-billed dinosaur roamed the plains next to an inland seaway in what is now known as Dinosaur Provincial Park in Alberta.

There it rested, until it was dug up from the Badlands in 1919 by William Parks, the Royal Ontario Museum's first director of paleontology, and finally put on display in 1932.

This week, though, Corythosaurus was on the move again, transported in pieces from Research Casting International in Trenton, Ont., where it had been restored. It was put back together again on Wednesday at the ROM's new dinosaur gallery on the second floor of the swank new crystal.

It will mark the fourth major move for Corythosaurus and several other skeletons in the ROM's closets, some of which have been part of the museum's collection since it opened its doors in 1914. And when the James and Louise

Temerty Galleries of the Age of Dinosaurs opens to the public Dec. 15, Corythosaurus will be in a better position to educate the masses.

No longer will the member of the crested lambeosaurines family rear up on its two hind legs to its full height of more than 5 metres, tail dragging behind. It has been remounted in a scientifically correct pose, with its vertebrae more horizontal, tail extended and all four feet planted on the ground. It's now more than 3 metres tall at the hip.

When the 1932 ROM addition was designed with extra-high ceilings specifically to accommodate Corythosaurus, science was 30 years away from figuring out that most dinosaurs did not cruise around upright, like kangaroos.

So "Cory" isn't the only dino that has undergone a makeover. Campylosaurus also went from biped to quadruped, while Albertosaurus has been removed from its boxer's stance.

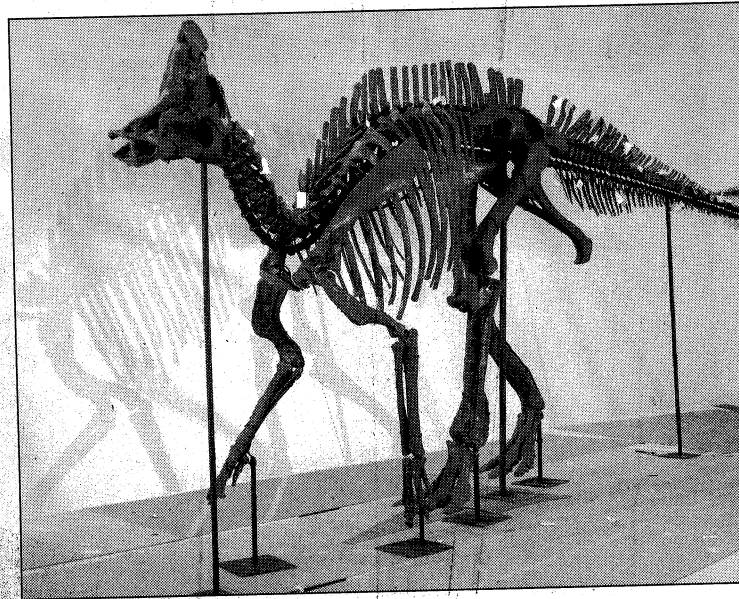
The first clue that change was needed, said David Evans, the museum's associate curator of vertebrate paleontology, was that the

front hooves were not particularly good for grasping food, and were more likely used for walking.

In the late '60s and early '70s, scientists were beginning to question the theory that most dinosaurs, when dug up, were found in a "death pose," with backbones more parallel to the ground. Plus, it looked more impressive to pose them on their hind legs.

By the time paleontologists realized the significance of trackways in the '70s, some of which showed four footprints, not two, Corythosaurus had been pawing the air for more than 40 years.

The first opportunity to rectify the situation came with the \$240 million redevelopment of the ROM, which began in 2003. When the dinosaur fossils had to be moved from the second floor, it gave the museum the opportunity to remount them, said assistant curator Janet Waddington. When the new gallery opens next month, 50 of the ROM's hundreds of dinosaur specimens will be on display, about twice as many as you could see in the old dinosaur gallery.



AFTER

PHOTO COURTESY OF THE ROYAL ONTARIO MUSEUM

MOVING DAY

Old corythosaurus: In the 1930s museum staff drilled through a vertebrae and leg bones and inserted rods, which were welded into place. "This thing was not intended to ever be taken apart," says ROM assistant curator Janet Waddington.

The skeleton is 75 per cent complete, which means the missing bits were recreated with plaster and the whole thing was painted to make it look the same.

Taking it apart: It took five workers from Research Casting International one day to dismantle corythosaurus in 2005. Owen Peter May said they used an angle grinder, which has a thin blade that creates few vibrations, to cut through the rods. The dried-out bones were brittle and the plaster had also deteriorated.

Moving it: The pieces were packed away in bubble wrap in special drawers that fit into crates on casters that had shock absorbers to protect the bones from vibrations during transit.

The cabinets were rolled down to a seven-metre truck and fastened to frames for the journey then unloaded and stored.

Cleaning, restoring it: Fossil and plaster were cleaned of old paint, shellacs and varnishes. Four blacksmiths made a new external armature from metal half-round rod. Associate curator of vertebrate paleontology Dave Evans checked to ensure the armature was in the right position before it was welded and bolted into place, and the skeleton was reassembled in the scientifically correct pose.

A thin layer of Vynac, or polyethylene glycol acetate, was brushed on to preserve bones and plaster. The dino is dismantled and packed into storage.

Putting it back on display: The skeletons are put back together the way they are taken apart, from the hip forward and the hip backward. May said that's because the bend of the backbone and where the scapula (shoulder blades) will attach the ribs.

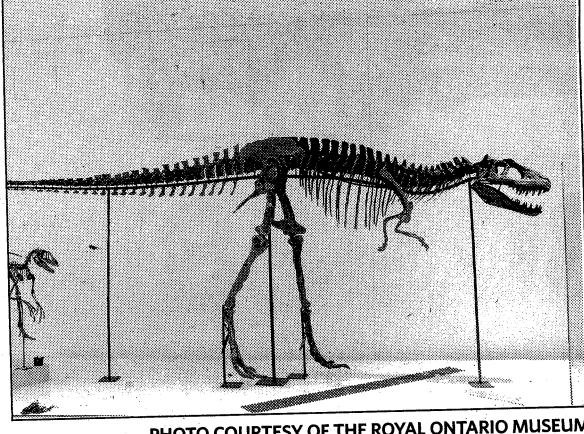
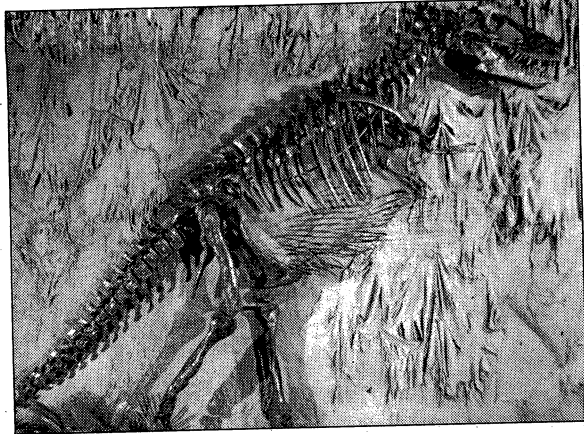


PHOTO COURTESY OF THE ROYAL ONTARIO MUSEUM

AFTER: What scientists say is a more realistic pose

ILLUSTRATIONS:
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