Dinosaurs

The dinosaurs shown above may have walked the Yukon in the Late Cretaceous. This scene is reproduced from a stamp produced by the Australia Postal Service. Original artwork is by Peter Trusler and is reproduced here with the permission of Australia Post.

Further reading

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Acknowledgements

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For more information, check the Yukon Geological Survey website at www.geology.gov.yk.ca

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Yukon dinosaurs

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- Remains of a Hadrosaur have been found in the remote northeastern Yukon, within the Bonnet Plume Formation.
- Dinosaur tracks near Ross River (pictured above) provide clues to the Yukon environment during the Cretaceous era, about 100 million years ago.

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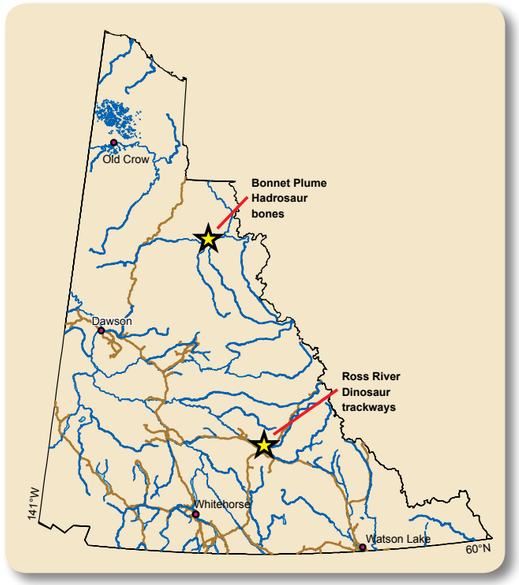
Introduction

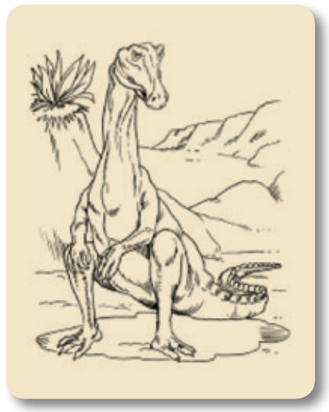
The word “dinosaur” comes from two Greek words meaning “terrible lizard.” Dinosaurs were probably closely related to reptiles (i.e., lizards, snakes, turtles and crocodiles), and they had some similarities to birds. The age of dinosaurs lasted from 225 to 65 million years ago, during the Mesozoic era. The Mesozoic era is subdivided into the Triassic (oldest), Jurassic and Cretaceous (youngest) periods. It was during the Triassic period that an important group of animals called “Archosaurs” became abundant. The Archosaurs gave rise to several types of reptiles — and to the dinosaurs.

The locations of the two areas in the Yukon where evidence of dinosaur habitation has been discovered are shown on the map to the right.



Bonnet Plume Bones

The first discovery of dinosaurs in the Yukon was in the Bonnet Plume Formation in northeastern Yukon. The Bonnet Plume Formation consists of sandstone and minor conglomerate, shale and coal, up to 1500 metres (5000 feet) in thickness. It was deposited about 100 million years ago (near the end of the Cretaceous period), when northeastern Yukon was relatively flat-lying, laced with rivers and dotted with swamps, and covered by ferns and conifer trees that thrived in a humid, warm-temperate to subtropical climate.



The dinosaur remains consist of three small bones, less than 2.5 centimetres (1 inch) in size, that were found in sandstone. They include a tail bone and two claw bones from a forefoot. The bones are from a duck-billed dinosaur, or hadrosaur. Hadrosaurs had heavy bodies and walked on two hind legs. Some had hollow crests on their skulls (the Lambeosaurines), while others had no crests (the Hadrosaurines). The nature and small size of the bones found in the Bonnet Plume Formation indicate that they came from a Hadrosaurine duckbill, possibly a juvenile Anatosaurus.

Scientists know a lot about Anatosaurus (meaning “duck lizard”) because so many bones of this kind of dinosaur have been found in North America. Anatosaurus grew to 5 metres (16 feet) high and 9 metres (30 feet) long, and weighed up to 3200 kilograms (3.5 tons). Described as a “graceful” animal, it had long, three-toed hind feet and slender forefeet. The toes ended in broad, rounded hoofs and the fingers were webbed. Its tail was long and flattened like that of a crocodile. The horny beak was broad and ridged like a duck bill, and it had no front teeth. Instead, about 2000 prism-shaped teeth lined the upper and lower jaws and new teeth grew throughout the animal’s life to replace those that wore out. Anatosaurus probably browsed on lush shrubs, swam in swamps, and ran through forests, possibly sharing their landscape with other dinosaurs like Triceratops and Tyrannosaurus.

Hadrosaurs laid eggs and lived in herds. They possibly took care of their young and they may have been able to communicate by blowing air through their fantastically shaped skulls and noses. Hadrosaurs were the first dinosaurs to be found in North America (in New Jersey in 1858), and 16 different species have now been found.

Ross River Trackways

Roadside outcrop at Whiskers Lake reveals dinosaur tracks. Ghosts of the trackway makers are moving through the area. If you visit this site, do not use a rock hammer or alter the outcrop in any way so that it will be preserved for future viewing.

Dinosaur tracks were discovered in 1999 in a section of coal- and chert-bearing siltstone, sandstone and conglomerate near Whiskers Lake, about 3 kilometres south of the hamlet of Ross River. These sediments were deposited during the Cretaceous period. A total of 251 fossil footprints (ichnites) were documented, including a distinct trackway of 4 footprints.

At that time, this part of the Yukon was characterized by conifer-covered, low, rounded hills between low-gradient river valleys where ferns and mosses flourished in a warm, humid subtropical climate. The tracks are on a trampled surface of fine-grained sandstone deposited on the flood plain of small rivers. The majority of the footprints are oriented either along or opposite to the paleocurrent (flow) direction recorded in these rocks, suggesting that the animals often followed dominant stream channels.

Ichnogenera (literally meaning “footprint groups”) are groups of dinosaurs whose characteristics can only be surmised from their fossilized footprints. Since it is often difficult to determine a dinosaur genus from tracks, footprints are instead categorized by their own form of genus, an ichnogenus. Six ichnogenera were identified at the Ross River site, with the majority of the tracks belong to ichnotaxon Amblydactylus. At least three distinct sizes of these prints were found, probably representing three distinct age groups moving through this area.

Overlapping tracks are not common at this site. This, combined with the dominant orientation of the tracks suggests that the area was used as a thoroughfare. Combining this information with the age range indicated by the track sizes suggest to paleontologists that the track-makers were moving in herd-like or social groups.

Dinosaur tracks at Whiskers Lake, near Ross River. On the left is a footprint in sandstone about 15 cm (6 inches) long. The right side is a three-toed imprint that infilled the original footprint.

Whenever sedimentary rocks, particularly near Cretaceous coal seams, are uncovered by erosion, road or mine construction, bedding surfaces should be examined for tracks. It’s the only way we will learn who went before us!