

1993 Fieldwork at Dinosaur Provincial Park

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Fieldwork in Dinosaur Provincial Park by staff of the Royal Tyrrell Museum of Palaeontology was seriously hampered by rain in 1993. This was not a problem unique to our field parties, as I heard the same complaint from most of my colleagues collecting fossils in the western provinces and states. Nevertheless, it was a productive summer. On rainy days, fossils were prepared and catalogued in the Field Station but whenever the precipitation stopped and the ground dried up enough to walk on, our field staff would head out into the badlands.

Three dinosaurs were excavated in July and August. A tyrannosaurid skeleton probably representing *Daspletosaurus torosus*, the largest carnivore in this area seventy-five million years ago. The specimen was not complete, but it is important because it includes the skull, which is the most useful part of a skeleton for identification and study. The vertebral column and ribs were also present, but the limb bones had all been destroyed by erosion. Although badly fractured, the bone prepared up quite nicely, and it should be a nice specimen. This specimen had been found in 1992 by Wayne Marshall (of East Coulee, Alberta) high in the badlands northeast of the park. Several hadrosaur skeletons were found in the same region when we were working on the tyrannosaurid quarry.

An ornithomimid skeleton found at the end of the 1992 field season was collected from the park in 1993. Two of the three species of ornithomimids ("bird mimics") known from Dinosaur Provincial Park were graceful animals smaller than most adult humans. Because their hollow bones are so fragile, specimens are rare and fragmentary. The new skeleton lacks skull and front limbs, but the preservation is beautiful. It will provide me and other palaeontologists with new information on the

vertebral column (backbone), especially the neck vertebrae. This is important because this knowledge strengthens our understanding of the relationship between birds and dinosaurs. Like modern birds, carnivorous dinosaurs had air sacs associated with the lungs. Tube-like extensions of these air sacs ran along the neck, and actually invaded the hollow interiors of most of the vertebrae. Hollow, air-filled bones are very characteristic of birds, and of carnivorous dinosaurs.

A virtually complete hadrosaur (duckbilled dinosaur), including skull, was found and collected in 1993. It is probably *Prosaurolophus maximum*, one of the largest dinosaurs found in southern Alberta.

Some specimens of this animal reached a total length of up to ten metres. It will be a difficult specimen to prepare because of the rather hard rock that surrounds some of the bones. However, when prepared the bone looks quite nice. The specimen was encased in plaster and burlap jackets, and sometime in 1994 will be lifted out of the badlands by helicopter.

Many other good specimens were recovered over the course of the summer, including a skull of the ceratopsian (horned dinosaur) *Chasmosaurus*. Four new dinosaur skeletons were discovered but not collected in 1993. Two are hadrosaurs, one is a tyrannosaur, and the last is an ankylosaur (armoured dinosaur). These specimens will be closely looked at during the 1994 field season to determine whether they are complete enough to merit excavation.

Because of the release of "Jurassic Park" in 1993, our work attracted even more media attention than it normally does. Magazine, newspaper and book writers, and film crews joined us from across Canada, and from England, France, Germany, Japan and the United States. The fame of Dinosaur Provincial Park has spread far and wide.

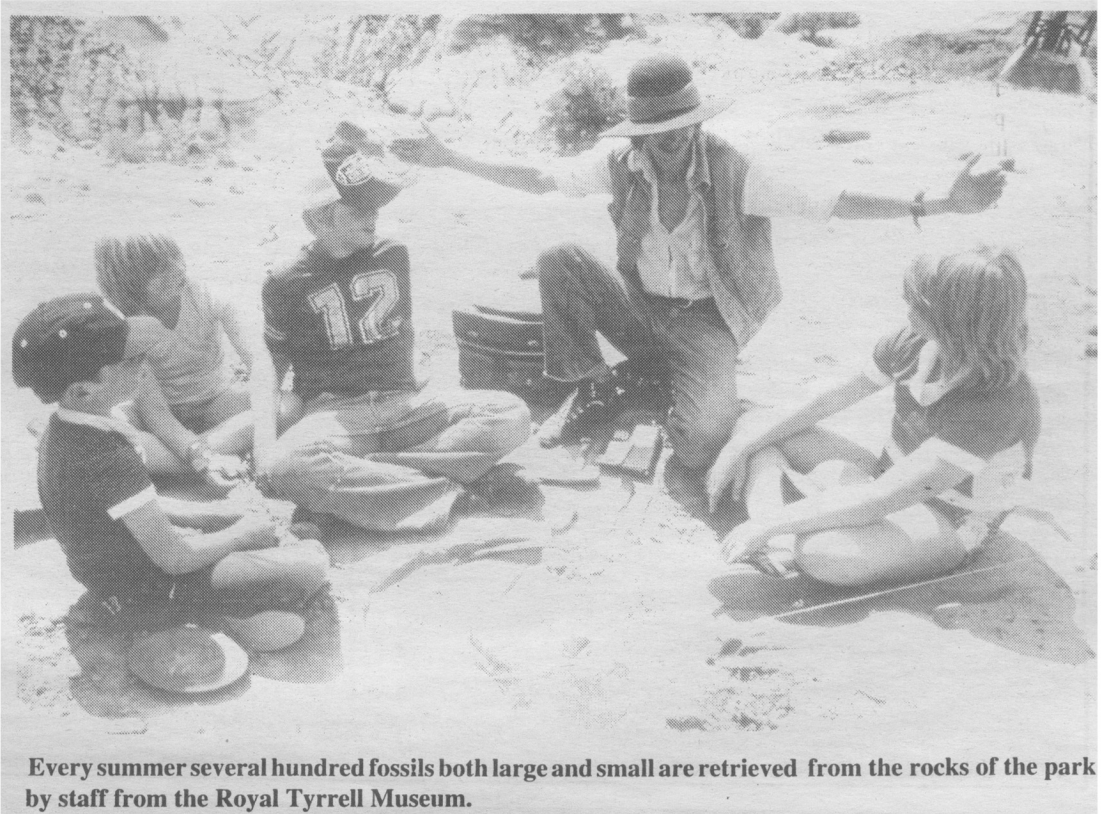
As in past years, volunteers as-

sisted us to collect dinosaurs in Dinosaur Provincial Park. These dedicated and enthusiastic assistants came from Alberta, Ontario, Denmark, England and the United States.

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The Daspletosaurus quarry was on a remote hillside near the north-east corner of the park. A 4 x 4 winch was needed to pull the skull up the hill since vehicle access to the site was not possible.



Every summer several hundred fossils both large and small are retrieved from the rocks of the park by staff from the Royal Tyrrell Museum.