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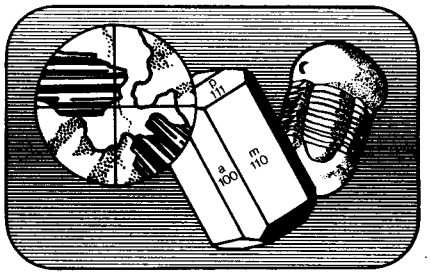

Geological Education

The Provincial Museum of Alberta: Dinosaurs in the Public Eye

Philip J. Currie
Provincial Museum of Alberta
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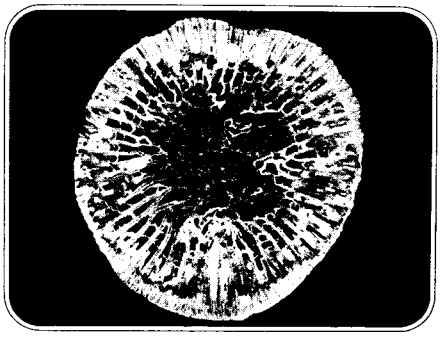

Transverse thin section (GSC 8527j, x4.8) of the solitary rugose coral Grewingkia rustica *(Billings, 1958), collected by A.F. Foerste from the Upper Ordovician (Richmondian) at Snake Island, Lake St. John, Quebec (Robert J. Elias, University of Manitoba).*

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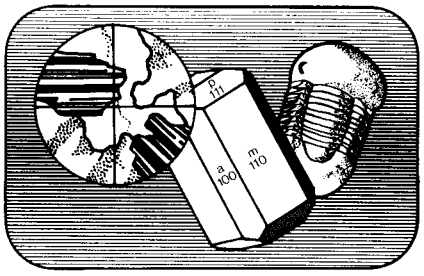

Geological Education

The Provincial Museum of Alberta: Dinosaurs in the Public Eye

Philip J. Currie
Provincial Museum of Alberta
12845-102 Avenue
Edmonton, Alberta T5N 0M6

Dinosaurs, as every schoolboy knows, were a tremendously successful assemblage of reptiles that lived in Alberta more than 65 million years ago. The richness of Alberta's Late Cretaceous dinosaurs is matched by few sites anywhere in the world. Approximately 500 significant specimens have been excavated in Alberta, and have found their way into more than 30 institutions around the world. In recognition of the richness of the palaeontological resources of Dinosaur Provincial Park (near Brooks, Alberta), UNESCO added the park to its list of World Heritage Sites in 1979.

Considering the number of dinosaurs that were collected in Alberta, it is surprising to many that very few are on display in the province. But Alberta did not take an active interest in her heritage until the mid-1960s, when palaeontology programs were established at the University of Alberta and the Provincial Museum of Alberta (Edmonton).

The palaeontology staff at the Provincial Museum consists of two curators and four technicians, but temporary staff and volunteers have brought the number as high as 18 at one time. Contrary to trends elsewhere, the staff and budget has been increased in the past three years in direct correlation with the success at collecting dinosaurs.

In 1980, a temporary exhibit entitled "Discovering Dinosaurs", was opened at the Provincial Museum in commemoration of Alberta's 75th anniversary. The display included casts of Alberta dinosaurs purchased or borrowed from other institutions, original specimens from the collections of the National Museum of Canada and the American Museum of Natural History, and original specimens collected by the Provincial Museum. The complete exhibit, including films, photographs, and paintings, was called by a visiting scientist one of the ten best on dinosaurs in North America. Its success surpassed our expectations when it attracted more than 30,000 visitors in the first week, breaking all previous attendance records for the museum.

In addition to the exhibit at the museum, a display was produced for Dinosaur Provincial Park, in time for the World Heritage Park Dedication (June 19, 1980). B.C. Hydro was assisted in the production of a display on Dinosaur footprints for the Peace Canyon Dam. Plans got underway to produce two museum-mobiles on dinosaurs, and major facilities in Drumheller and Dinosaur Provincial Park.

Public programming at the museum includes guided tours of the permanent and feature exhibits on dinosaurs for school or other organized groups. Films on dinosaurs are shown regularly, including those made on the Peace River canyon expeditions and work in the badlands of southern Alberta. An extremely successful film series on dinosaurs in fact and fiction was run in the spring. Children are fascinated by dinosaurs, and fill dinosaur craft programs to capacity.

The palaeontology laboratories are open to public viewing at least once a year, and a lecture series on dinosaurs at the Provincial Museum brough to Edmonton some of the top researchers on dinosaurs - Dr. R.T. Bakker (John Hopkins), Dr. Peter Dodson (Univ. of Penn.), Dr. John Ostrom (Yale) and Dr. Dale Russell (National Museum of Canada).

Because of intense public interest in dinosaurs, public participation is encouraged whenever possible. During the summers of 1979 and 1980, a bonebed was worked in Dinosaur Provincial Park. On Sundays, the park naturalists brought groups of 20 to 30 visitors to the site where they would receive a short lecture by a palaeontologist on the significance of the site and the techniques used to excavate (Fig. 1). Visitors were then encouraged to assist the palaeontologists by picking up and sorting washed out bone fragments on the periphery of the bone bed. In this way, the visitors were given an opportunity to assist the program and thereby gain a better understanding of collecting and preparation of fossils. The palaeontology program also has an active volunteer program. Although some volunteers assist us in the laboratory, the greatest success is achieved in the summer. Volunteers work with our crew for an average of three weeks. The majority have some academic or practical experience in either palaeontology or archaeology, and have come to us from Alberta, British Columbia, Ontario, Saskatchewan, California, New York and Scotland. About half rejoin us in subsequent years.

The Alberta Heritage Learning Project is producing a series on the history of the province for the Alberta classroom. Half of the first volume was on dinosaurs, and was edited by palaeontologists at the Provincial Museum. A teacher's guide to accompany this volume was also produced. Plans are now under way to publish a newsletter for the amateur fossil hunters in Alberta. Public education is being increased by the use of film. The Provincial Museum and a private firm (Videopak) co-produced a film on the Peace River Canyon expeditions to collect Dinosaur footprints. A more ambitious project is underway in conjunction with the Glenbow Museum (Calgary), to produce films on the dinosaur excava-

Figure 1 *Dinosaur Quarries, such as this one in southern Alberta, are visited regularly by the public. In Dinosaur Park near Brooks, public tours are organized by park naturalists.*

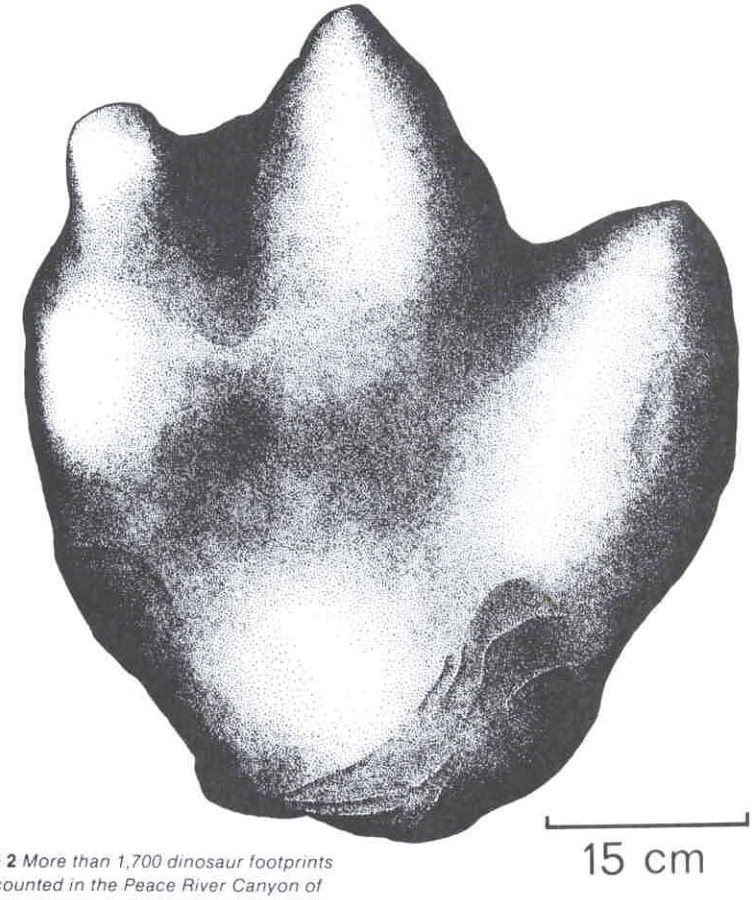

Figure 2 *More than 1,700 dinosaur footprints were counted in the Peace River Canyon of British Columbia. This footprint type,* Amblydactylus, *was left by a hadrosaur, a large bipedal, herbivorous animal. Drawing by Elizabeth Garsonnin.*

tions in Dinosaur Provincial Park. Many other films documenting aspects of the palaeontology program were produced for television, including a segment for the Nature of Things, and a National Geographic educational film.

The success of the public programming at the Provincial Museum is undoubtedly due to the research program. Visitor experience is intensified by the knowledge that active research is being undertaken at the Provincial Museum and that the results are exciting. Palaeontologists at the Provincial Museum have published on specimens from half of the Canadian provinces, the United States, Germany, France, Africa, and Madagascar. But most of the research is based on specimens from Western Canada.

From 1976 to 1979 there were four expeditions to the Peace River Canyon to collect dinosaur footprints (Fig. 2). The beds are Aptian/Albian (Early Cretaceous) age, but reveal a different footprint fauna than other localities for that age. In addition to dinosaurs, the earliest known bird footprints were found (Fig. 3) and possible turtle footprints. Approximately 100 footprints were excavated, another 200 were cast, more than 1000 were mapped and measured, and over 1700 were counted. The majority of the footprints were found in trackways showing convincingly that hadrosaurs were herding animals and spent much of their time in the water, and that carnivores travelled in small packs of two or three animals and were not afraid to chase their prey into relatively deep water. Knowing the length of a footprint and the length of stride, it is possible to calculate the speed an animal was moving when it made the trackway by using a formula developed from observations made on living animals. The fastest rate calculated for the one hundred measured trackways is only 16 km per hour.

Numerous dinosaurs have been excavated in the past few years including a new type of hadrosaur, the skeleton of a small theropod, several types of dome-headed (pachycephalosaurid) dinosaurs and numerous ceratopsians and hadrosaurs. One of the more exciting projects is the excavation of disarticulated bones from a bone-bed covering 2500 square metres (Fig.4). More than 95 per cent of the bones recovered belong to horned dinosaurs, and to date more than 40 individuals of all sizes of *Centrosaurus* have been identified. Two other bone beds in Dinosaur Provincial Park are dominated by another ceratopsian, *Styracosaurus*, and it appears that horned dinosaurs were susceptible to mass deaths. Finally, a series of multidisciplinary palaeontolog-

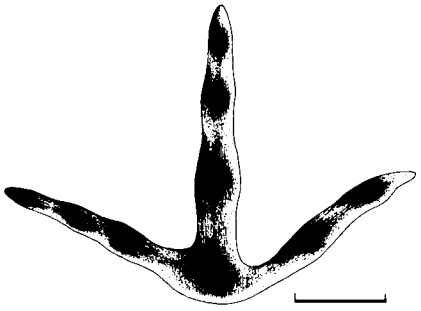

Figure 3 *Early Cretaceous bird footprints from the Peace River Canyon. More than 200 of these were found on a single slab of rock, adequately representing the earliest known record of bird tracks. Drawing by Linda Krause.*

ical studies got underway in 1980 on the fossil vertebrates, microflora, plants, and invertebrates and sedimentology utilizing geologists and palaeontologists of the Provincial Museum, the National Museum of Canada, Yale University, and the Universities of Alberta, Calgary and Pennsylvania.

Further information on palaeontological programs at the Provincial Museum can be obtained by writing to the Provincial Museum of Alberta, 12845-102 Avenue, Edmonton, Alberta, T5N 0M6.

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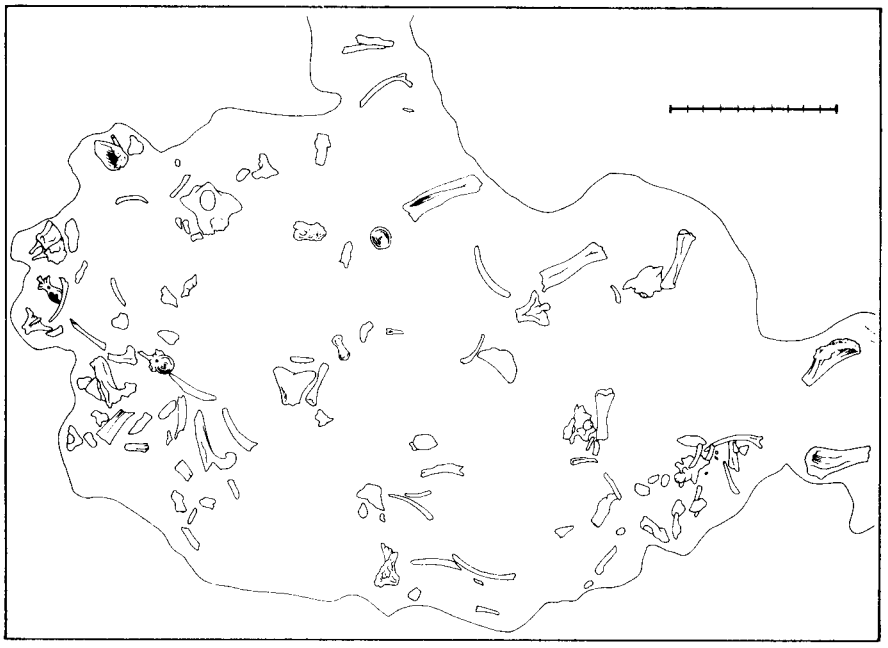

Figure 4 Centrosaurus *remains from a bone bed in Dinosaur Park. The bones of more than forty individuals have been revoered to date, which suggests a mass mortality. Scale represents 1 metre and is subdivided into ten cm units. Drawing by Linda J. Strong and Linda Krause.*