



ALBERTA

PALAEOLOGICAL

SOCIETY

BULLETIN

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ALBERTA PALAEOLOGICAL SOCIETY

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The Society was incorporated in 1986, a non-profit organization formed to:

- A. Promote the science of palaeontology through study and education.
- B. Make contributions to the science by:
 - 1) Discovery
 - 2) Collection
 - 3) Description, curation, and display
 - 4) Education of the general public
 - 5) Preserve material for study and the future
- C. Provide information and expertise to other collectors
- D. Work with professionals at museums and universities to add to the palaeontological collections of the Province (preserve Alberta's heritage).

MEMBERSHIP: Any person with a sincere interest in palaeontology is eligible to present their application for membership in the Society.

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| Single Membership | \$10.00 annually |
| Family or Institution | \$15.00 annually |

OUR BULLETIN WILL BE PUBLISHED QUARTERLY: March 1, June 1, September 1, and December 1 annually

DEADLINE FOR SUBMITTING MATERIAL FOR PUBLICATION IS THE 15TH OF THE MONTH PRIOR TO PUBLICATION.

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EDUCATION AND PROGRAMS

DARREN TANKE

As newly appointed Director in charge of Education and Programs with APS, I look forward to fulfilling this position. part of my job at the Tyrrell Museum includes Public Relations, both in the field and within the museum. Usually, in the field, this involves explaining to people what, why and how we excavate fossils. In the museum I am actively involved in fossil identification.

My frequent contact with the general public and amatuer collectors has made me aware of their wants and desires. I plan on fulfilling my obligation as Director of Education and Programing in the following manner.

EDUCATION

1. Instituting a column entitled "Cretaceous Critters" in which one genus of North American vertebrate (may be expanded to encompass invertebrates if other APS members are interested) is discussed in such a manner as to be of interest to both layperson and scientist alike.
2. Another column of upcoming Tyrrell Museum events, lectures, films, etc.
3. Identification of vertebrate fossils at regular APS meetings.
4. Fossil preparation and/or casting seminar(s) at regular meetings if enough interest can be established.

PROGRAMS

Most slide shows will deal with vertebrate palaeontology topics as most of my contacts are in this area. In leiu of slideshows some meetings may include a couple of films from the TMP film library. If, of course, any APS members would like to give a talk on something they think would be of interest to other members, I would be interested in hearing from them. Due to the frequent visits of palaeontologists to the Tyrrell Museum it may be possible that one or two 'big name' people may give presentations.

Anyone interested in giving a slideshow at one of our regular meetings may contact me at the Tyrrell Museum during business hours, 292-1994 (toll free) or my residence 823-6420 after 5pm.

Slideshows confirmed to date are:

1. Clive Coy, Technician at the TMP will talk on the Roy Chapman Expeditions to the Gobi Desert.
2. Dr. Dave Eberth, Curator of Sedimentology at the TMP will give a presentaion on Palaeozoic Vertebrates of the S.W. United States.

FIELD TRIP #2
July 9, 1988
Jura Creek

Jonathon Greggs

Jura Creek is one of the best but least visited of the local field localities. On July 9, ten members of the APS, and two guests, hiked the Jura Valley to examine its stratigraphy and palaeontology

Along the creek bed are excellent exposures of several formations from either side of the Devonian-Mississippian boundary. Jura Creek is also the type locality of the Exshaw Formation, which is about a one hour walk from the road.

After meeting at the entrance to the Loder Lime plant just east of Exshaw, the group proceeded through light bush to the creek. The first rock encountered was the grey limestone of the Morro Member of the Palliser Formation (Devonian). This may sound a little dry, but the exposure is a very narrow and deep canyon cut by the stream. In places the canyon is just 1.5m wide, but 8-10m deep! Once out of the canyon, outcrops of the Banff and Exshaw Formations were examined. Features which can be seen include algal mats and stromatolites, trace fossils (worm trails), joint patterns and beds of plasticly deformed sediments. Once at the type section of the Exshaw Formation, the group saw fossils of spiriferid brachiopods, orthocone cephalopods, fish bones and corals. No collecting was done at the type section because it is the standard to which all other outcrops of the Exshaw are compared and because the fossils are in bedding planes and cannot be removed without excavation with heavy equipment.

After spending several hours at and near the type section, the group retraced its steps back down the valley to the road. For the energetic and adventuresome, it is possible to climb to the ridge of Door Jamb Mountain, to the east and follow the ridge back to the cars.

Maps:

Topographic: 82 0/3 Canmore 1:50000
Geologic: GSC Map 1265A (82 0/3 coverage)

HISTORY:

Jura Creek was named during a reconnaissance of the Bow River Valley for the 1913 International Geological Congress. The name refers to black shale outcrops of the Exshaw Formation, which were originally thought to be Jurassic. Palaeontological work at a later date showed the actual age as Palaeozoic.

FIELD TRIP #2 (Cont'd)

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MacQueen, R.W. and Sandberg, C.A. 1970. Stratigraphy, age and inter-regional correlation of the Exshaw Formation, Alberta Rocky Mountains. Bull. Can. Ptr. Geol. v. 18, p. 32-66.

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OPEN HOUSE AT DEVIL'S COULEE

WAYNE BRAUNBERGER

On Saturday, August 27, 1988, Les Adler and I travelled to southern Alberta to view the dinosaur egg site. We left Calgary at 6:00am and arrived at 9:00am. The site is on the northern edge of the Milk River Ridge, to the south of the east end of the Milk River Ridge Reservoir. The nearest towns are Warner to the east and Raymond to the north.

The open house was a popular event and the area was crowded with people. Several cars with out of province license plates were seen amongst the multitude of vehicles from Alberta.

Guided tours, displays and refreshments were there for everyone's enjoyment. Two tours were available, a short half hour tour to the egg nest excavation and a one hour tour that included more information on the geology and environment, as well as the nest site. Three tents were set up, two display tents and a refreshment tent. One display tent was by the Friends of the Tyrrell Museum on their activities, the second was specifically on the egg site itself.

Devil's Coulee is not an area of spectacular badlands as one might expect. The coulee is part of a drainage system flowing northwards off the Milk River Ridge. There the coulee is quite narrow and very steep. Although the badlands are not very spectacular, the discoveries made there have been. Devil's Coulee is the only dinosaur egg site discovered in Canada and the second site known from North America. The nests are quite well preserved and contain numerous remains of infant hadrosaurs

Much work remains to be done and several years will undoubtedly pass before the complete story of Devil's Coulee is known.

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Several errors in the membership list were brought to my attention, would members please check their address and phone number against this list and notify me of any such errors. Ed.

HER MAJESTY OWNS THE FOSSILS, BUT WE OWN THE DOCUMENTATION

August Bolvikoski

The Alberta Bill 11, which has amateur collectors in an uproar, will cripple the growth of interest in palaeontology, and will not stop illegal collectors. It seems a bit ridiculous that it will be forbidden to own fossils collected in Alberta, whilst allowing ownership of out-of-province fossils. This Bill will also reduce the number of fossils collected and preserved. Do not feel guilty about chucking your fossils in the river in response to this bad legislation; those fossils would have eroded away without you, anyway. Museums say that they can protect and preserve fossils for future study, but for a rebuttal, consider some of the horror stories told by Teichert et al (1987).

But to get to the point of the title of this article. The Crown can own title to fossils and do as it pleases. This is all part of established law, and is best known in regards to mineral rights. The Alberta government can make laws and regulations regarding fossils.

Fossils, however, are worthless without documentation. Museums cannot make much use of material that has no locality data, no stratigraphic data, or other such documentation. Will they be quick to accept such fossils? I think not.

The Alberta government can lay claim to fossils by right, but it cannot claim the documentation, which was created by the collector, not found lying alongside the fossils. Anything created can be subjected to copyright and patent laws, which are controlled by the federal government. If the provincial museums want to confiscate fossils, they cannot do the same for the documentation. Let them have the fossils, but charge them your costs (gas, labour, vehicle wear and tear) plus a profit margin for the locality data. You own the copyright on the data; you have the moral rights to it; hide the data where a search could never find it and the museums will have nothing but a pile of rocks.

Museums claim they do not have the right budget to buy such material, but it would be cheaper to do so instead of going off on China expeditions. Under the registration procedures, a collector with a large collection is faced with spending hundreds of dollars photographing the fossils, with the possibility that they will still be confiscated.

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Teichert, C., W.C. Sweet and A.J. Boucot (1987). The unpublished fossil record: implications. *SENCKENBERGIANA LETHAEA* 68:5-19

CRETACEOUS CRITTERS

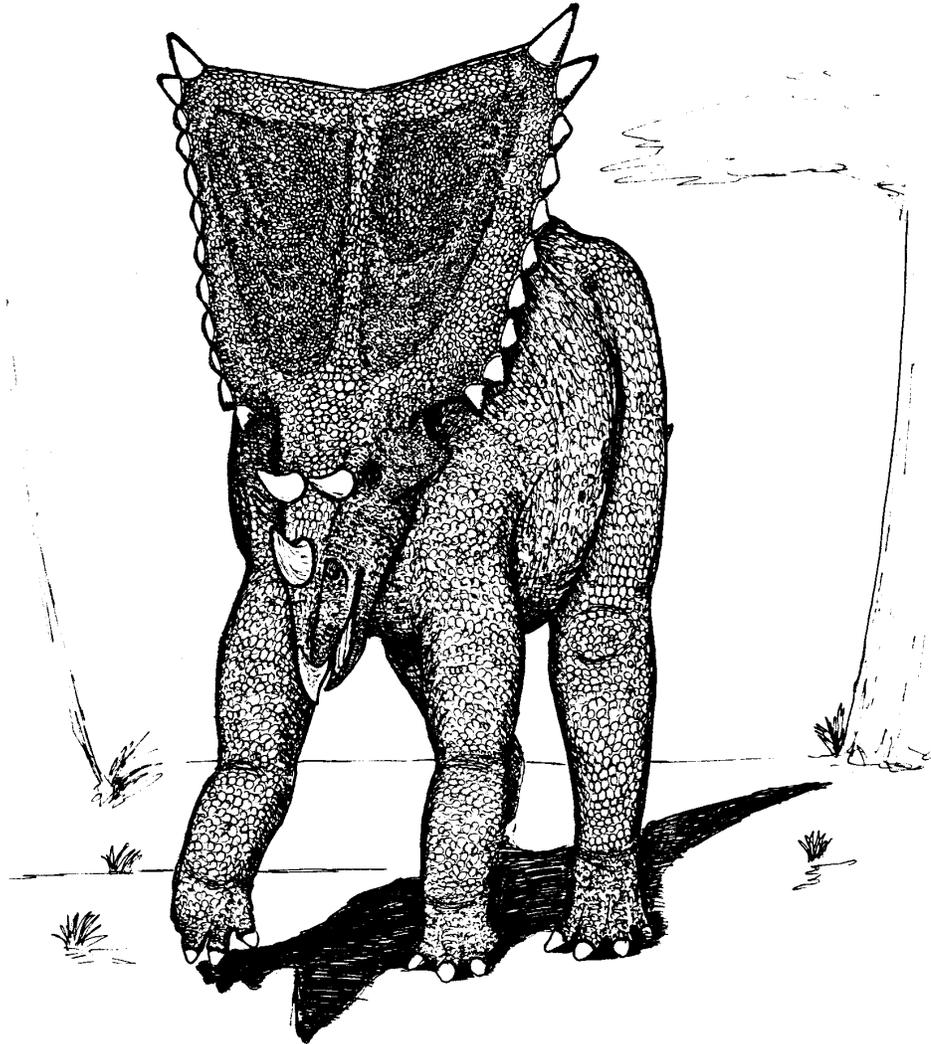
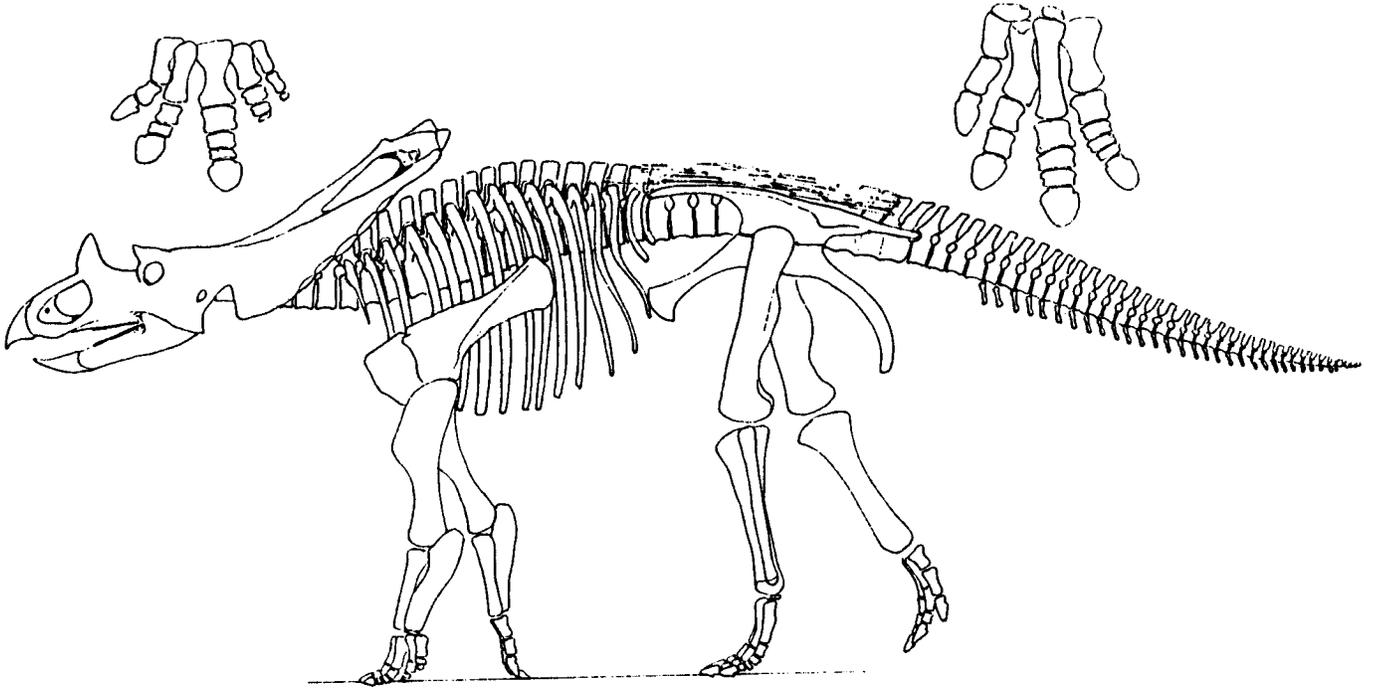
No:1 CHASMOSAURUS

Darren Tanke

The horned dinosaur Chasmosaurus is well known from isolated skulls, complete skeletons and bonebeds. The best material comes from the Judith River Formation of Dinosaur Provincial park, Alberta, dated at approximately 75 million years old. An unexplored Chasmosaurus bonebed is known from the Hilda, Alberta, area. Skull materials once identified as Eoceratops are probably referable to Chasmosaurus (Lehman, 1982). The only real differences between the two are minor proportional variations and differently curved horns, both are probably the result of growth and age differences or individual or sexual variation. The poor quality type of Ceratops montanus from rocks of equivalent age in Montana is also probably referable to Chasmosaurus (J. Horner, Pers. Comm., 1982). A Chasmosaurus bonebed in the Aguja Fm. of Texas was extensively studied by Lehman (1982) as part of his Masters thesis.

The skull of Chasmosaurus is characterized by a large lightly-constructed triangular frill covering the neck and shoulders. The "Chasm" in Chasmosaurus refers to the extremely large openings in the frill which reduced it to a bony framework. A pair of large, pointed triangular bones called epoccipitals are always found on the back corners of the frill, as are a series of about 8 Limpet-shaped epoccipitals which run down the sides of the frill running towards to the face. The horns over the eyes were evidently highly variable. Whilst most individuals had a set of small horns, some had none and some had very prominent orbital horncores. At present 5 species of Chasmosaurus have been described, four from Alberta and one from Texas. The validity of most of the Albertan species is open to debate as much of the "differences" are quite possibly age or sexual differences only. Accumulating evidence from the Centrosaurus bonebed in Dinosaur Provincial Park and the Pachyrhinosaurus bonebed near Grande Prairie, Alberta, shows a wide variety of horn shapes, curvatures and frill development- all directly related to growth, sexual differences (which are male or female is still not known) and individual variation. Whilst Centrosaurus and Pachyrhinosaurus are from a different sub-family, I would suspect that if the Hilda Chasmosaurus bonebed were to systematically excavated, highly variable horn and frill development would be documented.

Ceratopsian posture has received much attention as of late. The older sprawling forelimb reconstructions are awkward and in line with trackway evidence. A more upright stance is presented here, drawn by APS member Tracy Ford of Poway, California. Chasmosaurus was a plant-eating dinosaur, similar in appearance to the modern rhinoceros and of about the same size and weight.



Chasmosaurus

Drawings by
Tracy Ford

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ADDRESS CHANGE

**Names and contact information removed
to protect members' privacy.**

BOOK REVIEW

LES ADLER

The Fossils of Montceau-les-Mines.
Scientific American. September, 1988. Volume 259, No:3 pp.104-111.
By Daniel Heyler and Cecile M. Poplin.

Recently I reported on a fossil find at Parrsboro, Nova Scotia. This report is concerned with another fabulous find, this one being located 300km S.E. of Paris, France. Amateurs working weekend after weekend retrieved 7,000 shale slabs and 100,000 nodules before machinery from coal strip-mining operations wrecked them. The location and orientation of each nodule was recorded, this being the first time that such precise modern excavating methods have been employed on deposits of this age. Nodule fossils much as those at Mazon Creek, Illinois, U.S.A., a Triassic site in Madagascar and a Cretaceous site at Ceara in Brazil are more three-dimensional and give a clearer picture of an organism's physical form.

The fossil flora at this site enabled the lower layers at Montceau to be dated at the Stephanian Stage, (the latest stage of the Carboniferous, or Pennsylvanian Period), and the upper layers to the Autunian Stage, (the earliest stage of the Permian Period). The fossils found include plants, arthropods, vertebrates, worms and a pelecypod. Nearly 300 identified species of plants include horsetails, ferns, seed ferns and conifers. As time passed the conifers tended to replace the other groups indicating the change to a drier, cooler climate.

The most numerous and well-preserved group consists of a half dozen classes of primitive crustaceans such as syncarids, (primitive shrimps), ostracods, estherias, euthycarinoids and xiphosurians including horseshoe crabs. There were also millipedes, spiders, scorpions, sow-bugs and eight orders of insects.

The vertebrates include four classes: bony fishes, cartilaginous fishes, amphibians and reptiles. There were also fossil imprints of falling rain, ripple marks and the cracked pattern of drying mud. These marks reveal intervals of dryness alternating with rainfall. Rapid sedimentation and a scarcity of nutrients indicate that Montceau was located at an estuary where the flow of fresh water alternated with brackish tides. The fossil fish indicate that the lakes in the area must have been linked at times and also that they were salty.

These fossils help scientists locate where the continents were placed relative to each other before continental drift broke a super-continent apart. The fossils add to the picture of evolution on this planet. The article is accompanied by many photos of fossils and the site. There is also a composite illustration of 32 types of fossils that inhabited this hot, humid landscape.

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ADDITION TO MEMBERSHIP LIST

Names and contact information removed
to protect members' privacy.



ALBERTA PALAEOLOGICAL SOCIETY

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