

# BULLETIN

VOLUME 8 NUMBER 4

DECEMBER 1993

PALEOGENE



*plesiadapis*

## ALBERTA PALAEOONTOLOGICAL SOCIETY

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The Society was incorporated in 1986, as 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
  - 4) education of the general public
  - 5) preservation of 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.

Single membership	\$10.00 annually
Family or Institution	\$15.00 annually

THE *BULLETIN* WILL BE PUBLISHED QUARTERLY: March, June, September and December. Deadline for submitting material for publication is the 15th of the month prior to publication.

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Requests for missing issues of the *Bulletin* should be addressed to the editor.

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†APAC is the Alberta Palaeontological Advisory Committee

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## UPCOMING APS MEETINGS

Meetings take place at **7:30 p.m.**, in Room **B108**,  
**Mount Royal College: 4825 Richard Way SW, Calgary, Alberta**

**December 17**—(tentative) Collecting microfossils, with Howard Allen

**January 21, 1994**—The Permian of Alberta, with Dr. Charles Henderson, University of Calgary

**February 18**—(programme to be announced)

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**ON THE COVER:** *Plesiadapis* sp., early Paleogene, North America & Europe: "Shown skittering among the lowland trees, *Plesiadapis* was an intermediate between shrew-like mammals and primate forms." Art by Chris Bretz, APS member. Copyright ©1993. Reproduced by permission.

## President's Message

by Les Adler

After a pleasant fall, winter is approaching. **Holger Hartmaier** is arranging a balanced program: microfossils, invertebrate fossils and palaeobotany. The financial statement (printed elsewhere in this bulletin) shows that the APS is in a sound financial situation. We would appreciate receiving your 1994 membership dues if they haven't already been sent. Many interesting field trips will be conducted in 1994.

After you have enjoyed the Christmas and New Year season, you may be able to catch up with the labelling and identification of your specimens. Merry Christmas and Happy New Year to all, from your executive! □

## APS Member Finds Dinosaur

by Les Adler

On November 3rd of this year, **Alex Harich** arranged to meet Royal Tyrrell Museum representative Darren Tanke, at midday, north of the museum. Les Adler went along to take pictures. The day before, Alex had found a small portion of a dinosaur exposed at a locality four kilometres into the badlands, in a small dry creek bed.

A 20 cm. section of both the upper and lower jaws, with many teeth grooves, of a hadrosaurian (duck-billed) dinosaur was visible. The specimen was identified as a mature *Edmontosaurus*. Darren collected all the loose pieces and impregnated the teeth and jaws with a preservative, to protect the specimen until an excavation party can be organized. Darren also located part of the tail, so it is possible that a significant portion of the animal may be available for collection. □

## Membership Updates...

**Heather Whitehead**, your former editor, until recently residing in London, Ontario, reported in a letter of August 23 that she was nearing completion of her Master's degree in library science at the University of Western Ontario, and wished to say "Hi" to all her friends in the APS. She noted that she had two job interviews pending, both in the United States...a change-of-address card has recently arrived from Heather, listing her new address as Troy, NY...congratulations, Heather!

Other members sporting new addresses include: **Les Adler** (new P.O. box number); **Susan Huber**, a new address on Salt Spring Island, BC;

**Harry Kelly**, from Palm Desert, CA to Victoria, BC; **Keith Mychaluk**, from Malibu to Thousand Oaks, CA; and **Kevin Shannon**, from Beaver Dams, NY to Spring Hill, FL.

For details, see the up-to-date membership list, printed elsewhere in this issue. □

## Calgary Rock and Lapidary Club Show-and-Tell Night

The Calgary Rock and Lapidary Club has invited the Alberta Palaeontological Society to participate in a Show-and-Tell Night, scheduled for **February 11, 1994**, as part of their club birthday celebrations.

Three tables will be available for us to set up some exhibits and activities showcasing the fossil collecting hobby. Assuming a table is shared by two people, we could provide six displays for such things as fossil preparation, fossil identification, collection displays, etc. At the show-and-tell other tables will be set up by CRLC members who will be demonstrating other aspects of the rock and lapidary hobby.

The idea for the Show-and-Tell Nights is to promote a more active and hands-on interest in the hobby by allowing interaction among the membership.

If you are interested in participating, please contact **Holger Hartmaier** at (403) 938-5941. More details will be available at the December APS meeting. □

## Courtenay, B.C. Home of Fossil Society, Museum

Visitors to Vancouver Island, British Columbia should check out the Courtenay and District Museum, which has a collection of local Cretaceous fossils, and publishes an illustrated pamphlet titled *Fossils of the Courtenay Area*. Our intrepid reporter, **Wayne Braunberger** visited the facility this summer, and made contact with the local palaeontological society. Interested persons should get in touch with **Maria Box**, at this address:

Vancouver Island Paleontological Society  
RR #4, Site 4-10 C17  
Courtenay, B.C.  
V9N 7J3

□

## Program Summary

October 15, 1993: Bill Carson and Corliss Moore, *An Introduction to DINOTOUR*

DINOTOUR was born in the early 1990s through the efforts of six volunteers, led by Dr. Philip Currie of the Royal Tyrrell Museum of Palaeontology. Their aim was to conduct a series of not-for-profit tours of important dinosaur localities and collections in western North America, for interested members of the general public. The project has been successful, with three annual tours completed, and two tours scheduled for next year.

In an effective presentation using slides and maps, Bill and Corliss showed highlights of past tours, as well as a brief outline of dinosaur evolution which illustrated the significance of the various stops on the tour.

The first DINOTOUR trip, in 1991, took participants through a number of quarries, dinosaur egg sites and museums in Montana, Wyoming and Utah, under the guidance of Dr. Phil Currie. Besides the many dinosaur-oriented attractions, members visited several world-famous scenic/historic sites, including Yellowstone Park, the Grand Tetons and Custer National Monument.

In 1992, participants—many second-timers—visited localities in Utah and western Colorado. Fourteen local experts, many of them “big names” in dinosaur research, conducted tours of restricted areas and museum labs, and gave evening talks and slide shows.

The 1993 tour, with 42 participants, travelled to more sites in Colorado, New Mexico, Arizona and Utah, with Dr. Phil Currie once again acting as scientific leader.

For 1994 two trips are planned, the first to take place in early May, covering a number of important localities in southern Alberta, including Drumheller, the Crowsnest Pass *Tyrannosaurus rex* quarry, St. Mary River tracksite, Writing-On-Stone Provincial Park, the Devil’s Coulee egg site and Dinosaur Provincial Park. As in past tours, participants will be privileged to visit areas normally restricted to the public, and receive on-the-spot commentary by experts in the field. The second trip, set for October, will centered on the major dinosaur discovery sites in Texas, including new Triassic quarries and Cretaceous trackways.

Those wishing to receive more information on upcoming trips are asked to contact DINOTOUR, c/o 12231 Lake Fraser Way SE, Calgary, Alberta, Canada, T2J 3T2.

– Howard Allen,  
with notes provided by *DINOTOUR* □

## DINOTOUR prices announced

Dates and prices for DINOTOUR IV have been announced by the Dinotour Committee.

The trip, to be held **May 7 to May 15, 1994** will tour important dinosaur sites in Alberta (see Program Summary, this page).

Prices, in Canadian dollars, have been set at **\$1000** double, or **\$1200** single. This includes reception, bus transportation, all motels, daily lunch bar, admissions, guidebook, T-shirt, wind-up dinner and the expert guidance of Dr. Philip Currie, head of dinosaur research at the Royal Tyrrell Museum of Palaeontology.

**A deposit of \$300 is required by December 15, 1993.** The balance shall be paid by March 1, 1994.

The 1994 Texas trip is still in the planning stages, and more information will be made available at a later date.

Contact:

**Corliss Moore, (403) 271-2350** (evenings) or  
**Bill Carson, (403) 239-6454** □

## Fossils in the News

*The Southwest Booster*, Swift Current, Saskatchewan, July 19, 1993:

**70–75 million years old**  
**Major discovery of plesiosaur at Ponteix**

The complete skeleton of a nine to ten-metre long plesiosaur has been discovered by local resident Robert St. Cyr, near the town of Ponteix, in southwestern Saskatchewan. Tim Tokaryk, assistant curator of vertebrate palaeontology at the Museum of Natural History in Regina, describes the find as “major and significant.” The skeleton, nicknamed “Mo,” was to be excavated during the summer and removed to the museum’s lab for further study.

*The Calgary Herald*, August 14, 1993:

**Leaves of time**

This full-page, illustrated feature article details the history of the Cambrian Burgess Shale fossils, the focus of a UNESCO world-heritage site, in Yoho National Park, B.C. A group of local residents is trying to raise funds to build a major museum and research facility in or near the town of Field.

*The Calgary Herald*, August 20, 1993:

### **Egg find one of best**

[*This article might well have been placed in the "Dinosaur Boners" section, since the article—illustrated with a photo of a clutch of 10 dinosaur eggs at Bonham's auction house in London (see "Dino droppings," this page)—is a report of mastodon bones from Nova Scotia! —ed.*]

(CP-AP) Gypsum miners in Milford, Nova Scotia have unearthed the bones of a young mastodon about 100 metres from the site of an earlier discovery of the skeleton of an adult male. [see *Fossils in the News, APS Bulletin, March 1992 —ed.*] The bones, dubbed "Baby Stanley"—for the miner who found them—represented only about 5 percent of the complete skeleton, but palaeontologists are enthused nonetheless: "It's a spectacular find—one of the best finds ever," says Bob Grantham of the Nova Scotia Museum in Halifax.

The remains were excavated during a two-week dig. Researchers recovered the left lower jaw, an upper foreleg, ulna, scapula, several ribs, vertebrae and foot bones. Vegetable matter was reportedly found between the animal's teeth. Other items discovered included turtles, snails, clams and freshwater mussels, and "a lot of mastodon dung." Grantham surmises that the bones had been washed down an ancient stream bed before being deposited at the site of their discovery.

*The Edmonton Journal*, Aug. 22, 1993:

### **Paleontologist hunting fossils in remote Sahara**

University of Chicago palaeontologist Paul Sereno, recently famous for discovering the early dinosaurs *Eoraptor* and *Herrerasaurus* in Argentina, is now setting his sights on Saharan Africa. Sereno will lead a 24-member team including a film crew to a site in northern Africa for ten weeks. The exact location is being kept secret in hopes of foiling local bandits. "It's a scientific gold mine" says Sereno, "The desert is really the frontier for dinosaur research because nowhere else do we have an expanse of land about which we know so little."

The film crew's work is scheduled to air as the season premiere of the *New Explorers* show on PBS TV, this fall.

*The Calgary Herald*, September 16, 1993:

### **Dino droppings sell for \$6,066**

London (Reuter)—*Jurassic Park* madness continues, with the recent sale by Bonham's auction house of a pile of dinosaur excrement from Texas.

An anonymous telephone bidder paid CDN\$6,066 for the 23 coprolites, more than 10 times the expected price. Other items sold included a nest of 10 sauropod eggs, for \$92,999 and a nest of five eggs for \$25,283.

*The Calgary Herald*, Sept. 18, 1993:

### **'Lounge lizard' has an awfully old line**

By Mark Lowey, Herald writer—Dr. Dale Russell's speculative model of an erect, green, human-like "dinosauroid" has made yet another appearance, this time at a recent public lecture in Calgary. Russell, curator of fossil vertebrates at the Canadian Museum of Nature in Ottawa, discussed the history of life on earth, and its possible future. The "dinosauroid" fits into this picture as Russell's prediction of the "rational animal" that one line of dinosaurs might have evolved into, had they not been wiped out at the end of the Cretaceous period.

Related topics of discussion included: the influence of the moon and other planets on Earth's suitability for life, such as the moon's stabilizing effect on Earth's rotation, and Saturn and Jupiter's influence in gravitationally "mopping up" potentially Earth-smashing asteroids; the probability of life on other planets; and Earth's future in the evolution of the universe. Dr. Russell concludes: "we live in an extraordinarily privileged moment in our water planet".

*The Calgary Herald*, Sept. 30, 1993:

### **Fish Fossils Found**

Sydney (Reuter)—Australian scientists have discovered the world's richest source of fossilized fish, 300 km. west of Sydney. The remains of 3,000 fish, including four new species, were revealed by Australian Museum palaeontologist Alex Ritchie. The site (whose age is not mentioned in the article) contains the highest known concentration of lobe-finned fishes.

*The Calgary Herald*, Oct 23, 1993:

### **Dinos blasted**

Geophysicists at the Lunar and Planetary Institute in Houston, Texas have re-analyzed gravity measurements from the Chicxulub crater in Mexico, which many point to as being the cause of the dinosaurs' extinction at the end of the Cretaceous period, 65 million years ago. The new calculations, if correct, indicate a blast eight times greater than originally estimated, making the crater, at 305 kilometres in diameter, the largest known crater to have been formed within the solar system in the past 4 billion years.

*The Calgary Sun*, Oct. 21, 1993:  
**Mystery dinosaur unearthed**

Salt Lake City—The skeleton of what palaeontologists believe to be a new species of carnivorous dinosaur, up to six metres long, is being excavated from Jurassic deposits in Dinosaur National Monument in eastern Utah.

*Lapidary Journal*, July, 1993:  
**Buy a bone**

This summer, officials at the Field Museum in Chicago tried a novel way of financing their newly acquired reconstruction of a *Brachiosaurus* skeleton. In the museum's "Buy a Bone" program, members of the public were invited to purchase individual bones for donation to the museum. Prices ranged from \$5 for a tooth or tail vertebra, to \$1000 for the skull or a foreleg.

The original skeleton, excavated in 1900 near Grand Junction, Colorado was too fragile to be mounted, but parts of it will be displayed along with the reconstruction. Bone buyers were invited to a "Hard Hat Party" at the museum to watch the dinosaur being built.

*CSPG Reservoir* (newsletter of the Canadian Society of Petroleum Geologists), Nov. 1993:  
**New Paleozoic and Triassic galleries at the Royal Tyrrell Museum**  
*(from an abstract by Paul A. Johnston, Curator of Invertebrates, Royal Tyrrell Museum)*

In the most extensive exhibit renovation since its 1985 opening, the Royal Tyrrell Museum of Palaeontology in Drumheller is commencing a complete overhaul of the Paleozoic and Triassic galleries. The museum hopes to raise at least \$3 million from corporate sponsors to cover the costs of renovation.

One major display planned is a life-size diorama of a Devonian reef environment, including over 100,000 model animals. A walk-through diorama of the Burgess Shale fauna, with animals enlarged to the size of "sofas and refrigerators" is also planned.

New specimens to be exhibited include spiny Moroccan trilobites, giant Ordovician stromatopoids [see "*Fossils in the News*," *APS Bulletin*, March 1993 —ed.], early Paleozoic fishes, skeletons of a giant phytosaur, an aetosaur, a therapsid and *Edaphosaurus*.

Renovations will take place over a period of five to ten years, depending on funding; the first phase, the Devonian reef diorama, will open in the spring of 1994. □

[Thanks to Les Adler, Brian Allen, Wayne Braunberger, Leona Busch, Trudy Martin, Harvey Negrich and Evelyn Wotherspoon for saving and handing over clippings —ed.]

## Dinosaur Boners

More palaeononsense gleaned from the media

### Apple-like Oranges

*Canadian Geographic* Sept./Oct. 1993, pg. 78.

In his review of Wayne Grady's book *The Dinosaur Project*, writer Daniel Wood refers to the discovery in Mongolia of "...the complete skeletons of 60 stegosaurus-like protoceratops..."

As Dr. William A. S. Sarjeant of the University of Saskatchewan points out in his letter-to-the-editor in the Nov./Dec. issue: "As far as scientists can tell, there is no relation between the two: they lived in different geological periods and had very distinctive bone structures. Such a discovery would be as unlikely as finding giraffe-like elephants in Africa!" □

## Highlights from Exchange Bulletins...

*The APS receives several bulletins and newsletters from other societies and clubs on a regular basis. Members are encouraged to examine copies of these, which are filed in the APS library. —ed.*

**The Earth Science News**—Earth Science Club of Northern Illinois (ESCONI)

### September 1993

• *The First Great Paleo-Artist: Benjamin Waterhouse Hawkins, part 1* by Allen A.

Debus—A fascinating, illustrated history of the work of the 19th-century British dinosaur artist responsible for many of the classic reconstructions.

### October 1993

• *Indiana Reptile Fossil* – note on the recently discovered footprint of a 300 million-year-old reptile, possibly a *Petrolacosaurus*.

• *The First Great Paleo-Artist: part 2 of 2.*

**Paleo Newsletter**—Austin Paleontological Society, Austin, Texas

### July 1993

• "*Eric*" the *Opalised Pliosaur*—summary of an article detailing the discovery and restoration of a Lower Cretaceous pliosaur skeleton, completely replaced by opal, from the Coober Pedy area of South Australia. □

## Reviews

**Australia's Polar Dinosaurs** by Patricia Vickers-Rich and Thomas Hewitt Rich, *Scientific American*, July 1993, pp. 50–55, including map, 7 illustrations, references.

The Riches each received doctorates in geology from Columbia University and are employed at Melbourne, Australia by Monash University and the Museum of Victoria. Among other activities, they are engaged in dinosaur research in southeastern Australia. This article presents their conclusions from excavating in two productive areas east and west of Melbourne in Early Cretaceous flood-plain deposits.

Dinosaur research in Australia was neglected for 70 years, until Monash University personnel resumed searching—with great success. Dinosaur Cove is west of Melbourne and is shown here. The article is illustrated by a mural for the Australian post office, with seven types of dinosaurs from at least six different families of the Early Cretaceous Period, about 100 million years ago, when Australia may have been adjacent to Antarctica, and southeastern Australia may have been inside the Antarctic Circle at that time. It is suggested that these dinosaurs lasted here longer than in other locations, in cold and in some darkness. 5,000 bones and two partial skeletons have been excavated at heavy financial cost, as well as many plant fossils. Among the issues being discussed are how the temperatures have been estimated, and how dinosaurs adapted to the conditions. *Allosaurus* is small here and survived much longer than anywhere else. Other forms seem to have arisen here earlier than elsewhere. The Riches speculate that the findings here do not appear to agree with the ideas of those who support the possible extinction of dinosaurs by an asteroid.

—reviewed by Les Adler

**An Unusual Theropod Dinosaur from the Triassic of Texas** by Sankar Chatterjee, *National Geographic Research and Exploration*, Vol. 9, No. 3, pp. 274–285.

This paper describes a new theropod, *Shuvosaurus inexpectatus*, from the Dockum Group (Triassic Red Beds of Texas). This group outcrops at the foot of the Caprock Escarpment of the southern high plains and in the Canadian River valley. Sediments are dominantly mudstone and siltstone with interbedded sandstone and conglomerate.

At a quarry near the town of Post, Garza County, numerous vertebrates have been recovered: tetrapods, lizards, pososaurs, aetosaurs,

phytosaur, crocodylomorphs, theropods, cynodonts, ornithopods and possibly mammals. These animals are thought to have died during a flash flood.

Three juvenile skulls of equal size are described. A complete and detailed description is presented including colour photographs, detailed drawings, and a reconstruction. *Shuvosaurus inexpectatus* possesses numerous characters known only in ornithomimosaur: toothless jaws, enormous eye sockets, and air sinuses in the nasal and tympanic regions. In addition, it had a short, heavy beak and strong palate which made a powerful and efficient nutcracker similar to that in modern seed eating birds.

Two phylogenetic interpretations are presented for this animal. Either it is an independent iteration of ornithomimid skull morphology in the Triassic or it is the oldest member of the ornithomimosaur. The last interpretation increases the range of this group by 75 million years.

—reviewed by Wayne Braunberger

**Chronic Osteomyelitis in a Hypsilophodontid Dinosaur in Early Cretaceous, Polar Australia** by J.D. Gross, T.H. Rich and P. Vickers-Rich, *National Geographic Research and Exploration*, Vol. 9, No. 3, pp. 286–293.

Chronic osteomyelitis [bone infection –*ed.*] in a partial articulated skeleton of a small dinosaur (about the size of a small kangaroo) in the family Hypsilophodontidae is described. The right and left lower limbs, pelvis, spine and tail were recovered from the Otway Group (Aptian–Early Albian), Slippery Rock site, Dinosaur Cove, southeastern Australia.

Black and white photographs, stereographic photographs and line drawings aid in describing chronic osteomyelitis in the proximal (toward the knee) and middle section of the shaft of the left tibia (shin bone) which resulted in failure of the proximal end of the bone to grow. This chronic infection of the bone may have been caused by bacteria or fungi. Similar changes are noted in bones of modern animals including humans. The authors think the animal died from complications due to the infection.

—reviewed by Wayne Braunberger

**Mysteries of the Orient** by Richard Monastersky, illustrations by Alan E. Cober, chart by Charlene Crabb; *Discover*, April 1993, pp. 38–48.

In 1984 Chinese palaeontologist Hou Xianguang, following a publication lead, discovered thousands of Cambrian soft-tissue fossils close to Chengjiang in the extreme west of

Southern China. Coincidentally, the very next day a team of researchers uncovered another set of soft-body Cambrian fossils in northern Greenland. Together with the Canadian Burgess Shale fauna there are now three sets of Cambrian lagerstätten (“mother-lodes” of soft-bodied fossils). [*I also believe that the Burgess Shale area has been greatly extended, and similar fossils are to be found in Utah, USA.* —L.A.] The Chinese and Greenland Cambrian lagerstätten are about 15 million years older than the British Columbia and Utah Fossils.

Alan Cober has provided brilliant illustrations to show the many types of invertebrates. The article describes their rapid development in the early Cambrian, the types of body plans, presumed changes in oxygen composition in the Earth’s atmosphere at this time, and all kinds of other possibilities that may have led to the Cambrian explosion of life.

A three-page spread of animal life through 600 million years, with two pages of illustrations of Cambrian animals provides pictures of some 75 genera. Excavations are continuing at this exciting location.

—reviewed by Les Adler

**New Limb on the Avian Family Tree** by Mark Norell, Luis Chiappe and James Clark, *Natural History*, September 1993, pp. 38–43

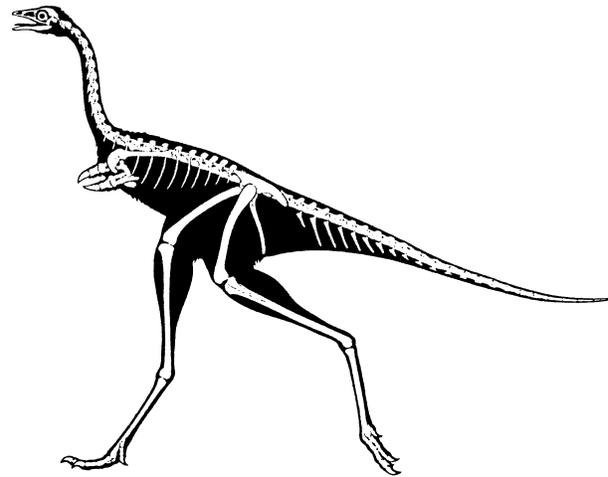
This article is accompanied by a brilliant painting of *Mononychus olecranus* and illustrations of skeletons of *Mononychus*, *Velociraptor*, *Sinornis* and *Archaeopteryx* plus photographs of portions of cleaned specimens of *Mononychus* and *Archaeopteryx*. Having examined the various relationships of the bones you will then see what the authors are telling you when they compare theropod dinosaurs and fossil birds.

Currently many vertebrate palaeontologists consider birds to be a subgroup of dinosaurs, descended from fast-moving bipedal carnivores that *Archaeopteryx* greatly resembled. Field parties from the American Museum of Natural History have been travelling to the badlands of Southern Mongolia for the last four of five summers visiting classic localities from the 1920s and finding new locations, with one of the objectives being to find fossils which will shed light on the origin of birds.

Recently, fossils of two sparrow-sized Early Cretaceous fossil birds—*Iberomesornis* from Spain and *Sinornis* from China—have been found in fine-grained, thin-bedded deposits that were once ancient lagoons or lakes. These fossils are often smashed flat, making interpretations

difficult. Mongolia provides both fossil birds and small theropod dinosaurs.

In 1987 fossil remains surfaced at Ulan Bator, Mongolia, named by Perle Altanerel *Mononychus olecranus* (“one-claw”). Malcolm McKenna found similar remains in July, 1992, 45 miles northwest of the Flaming Cliffs. More specimens appeared in 1993 and remains were also found in drawers at New York City from an Andrews expedition of the 1920s. The authors conclude that these specimens represent a fossil bird with short, single-clawed forelimbs instead of typical wings.



*Mononychus*—reproduced from *Natural History*, illustration by Michael Ellison: Copyright ©1993.

*Mononychus* upsets and complicates theories of the evolution of flight because it is a flightless bird dated at least 40 million years earlier than the fossil birds of China and Spain which had feathers and flew. Perhaps flight may have arisen twice in the geological history of birds. The line between modern birds and their typically dinosaurian ancestors is a diffuse one and the path of early bird evolution is circuitous. *Mononychus* specimens add an unexpected twist to the story of early bird evolution.

—reviewed by Les Adler

**“Living Fossil” Comes out of its Shell** by Clare Putnam, *New Scientist*, March 20, 1993, pg. 16.

Graptolites originated in the Cambrian period about 500 to 570 million years ago and were considered to have become extinct in the Devonian period. [*the APS field trip to Golden, B.C. in 1986 visited a graptolite locality— L.A.*] P.N. Dilly of St. George’s Hospital Medical School in London has found a present-day marine

animal near New Caledonia at a depth of 253 metres that he has named *Cephalodiscus graptoloides*, and which he considers to be a surviving member of the graptolites, because its spines are similar to the nema of graptolites.

—reviewed by Les Adler

**The Amphibious Past of Whales** by Sarah Bunney, *New Scientist*, March 20, 1993, pg. 17

J. Thewissen of Duke University Medical School in North Carolina and S. Hussain of Howard University, Washington, D.C., have discovered fossil ear bones and lower jaw bones of *Pakicetus* sp., in the Kala Chitta Hills of Pakistan. *Pakicetus*, the oldest and most primitive whale known, is a member of the Archaeoceti suborder of toothed whales of the early Eocene, about 54 million years ago. Archaeocetes were probably ancestors of modern cetacean groups—the toothed whales and dolphins or Odontoceti, and the filter-feeding baleen whales, or Mysticeti.

The Archaeocetes are thought to have been derived from the ancestors of the present-day pigs, cattle and deer, collectively known as artiodactyls. The above fossils provide further evidence to the molecular studies already carried out, relating to ear shape and function. *Pakicetus* had a primitive hearing apparatus and probably needed to return to land in order to breed, and could hear in both air and water. Unlike modern whales, *Pakicetus* had not yet severed all links with land.

—reviewed by Les Adler

**Sabre-toothed Tales** by Rosie Mestel, photographs by Dan Winters; *Discover*, April 1993, pp. 50 – 59.

The George C. Page Museum, adjacent to the La Brea Tar Pits, 7 miles from downtown Los Angeles, contains three complete *Smilodon* (sabre-toothed cat) skeletons collected from among the 166,000 bones recovered from the pits. The best specimen has been exquisitely photographed. Many of the photographs could be removed from the magazine, framed and put on display in your rumpus room to accompany your fossil collection.

With this large supply of bones scientists are able to tentatively establish how the animal looked in life, the distribution of fat and muscles, and the problems that it had to contend with. More than 5,000 bones show dislocations, bite wounds and infections. But until a sabre-toothed cat is found with the flesh preserved (as in Pleistocene or Recent Siberian mammoths or bison) many suggested theories cannot be proven.

—reviewed by Les Adler

**Dinosaur Book Directory**, *Earth*, September 1993, pp. 74–77

On these pages you will find the following books listed and reviewed; some short, some long. Accompanying this list are several advertisements for dinosaur eggs, models, paintings, sculptures and videos.

**Dinosaurs: A Global View**, 1991, Sylvia and Stephen A. Czerkas, Mallard Press; ISBN 0-7924-5606-8; 237 pp., hardcover; \$US40.

**The Complete T-Rex**, John R. Horner and Don Lessem, Simon and Schuster; \$US25.

**Dinosaur!**, David Norman, Prentice Hall; \$US25.

**Dinosaurs Rediscovered**, Don Lessem, Touchstone/Simon and Schuster; softcover, \$US12.

**The Flying Dinosaurs**, Philip J. Currie [APS member!], Illus. by Jan Sovak, Discovery Books; \$US33.

**The Last Great Dinosaurs**, [Alberta's dinosaurs] Monty Reid, Discovery Books; \$US30.

**Quest for the African Dinosaurs**, Louis Jacobs, Villard Books \$CDN32.

**Predatory Dinosaurs of the World**, Gregory S. Paul, Simon and Schuster, softcover; \$US14.

**Tracking Dinosaurs**, Martin Lockley, Cambridge University Press; \$US40 hard, \$US15 soft.

**The Dinosauria**, Edited by David Weishampel et al, University of California Press; \$US40 soft, ~\$US90 hardcover.

—reviewed by Les Adler

**Honey, I Shrunk the Mammoths** by Arlette Kouwenhaven, *Earth*, September 1993, pg. 10.

Andrei Sher and Vadim Garutt, palaeontologists at the Russian Academy of Sciences in Moscow dated 29 mammoth tusks found on Wrangel Island in the Siberian Arctic Ocean and found teeth as young as 3,900 years old—about 6,000 years younger than mammoths dated elsewhere. As well, twenty four of the tusks were smaller than usual, about two-thirds the size of ordinary mammoth tusks.

Wrangel Island appears to have become the last refuge of mammoths which were forced by temperature changes to move north as their food sources disappeared. Other scientists argue that the reason the mammoths disappeared was not the loss of food supplies, but over-hunting by humans. The Wrangel Island mammoths apparently died out because the island became too small for them, even in their dwarf form, and led to inbreeding and extinction.

—reviewed by Les Adler □

**APS MEMBERSHIP LIST, December 1993**

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

EXCHANGE BULLETINS & INSTITUTIONAL MEMBERSHIPS

## ALBERTA PALAEOLOGICAL SOCIETY, CALGARY, ALBERTA

*Financial Statement for Twelve Months*  
FOR THE YEAR ENDING AUGUST 31, 1993

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**Balance Sheet**

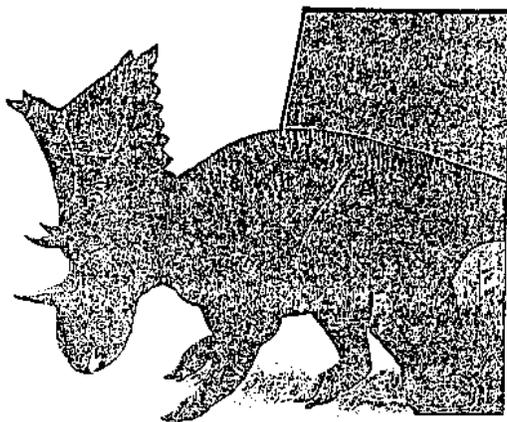
Bank Balance, Aug. 31, 1992	\$1,067.39	Unearned Revenue	\$10.00
Inventory of Pins at cost	\$25.84	Members' Equity	
APS T-Shirt inventory	\$500.00	Previous Year	\$1,254.37
Incorporation expense	\$78.00	Income for 1993	\$578.49
Office fixtures	\$459.00		\$1,832.86
less depreciation	\$287.37		
	\$171.63		
<b>TOTALS</b>	<b>\$1,842.86</b>		<b>\$1,842.86</b>

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**Income Statement For The Year Ending August 31, 1993**

REVENUE		EXPENDITURES	
Coffee revenue	\$74.86	Advertising	\$8.03
Bulletin sales	\$8.00	Bank charges	\$60.00
Foreign exchange	\$15.93	Bulletin expenses	\$472.51
Members' dues	\$760.00	Refreshments	\$59.46
Pin sales	\$18.00	Depreciation	\$42.91
Raffle revenue	\$8.25	Field trips	\$37.37
T-shirt revenue	\$1,205.00	Postage	\$59.92
Other revenue	\$316.00	Library expense	\$102.77
<b>Total revenue</b>	<b>\$2,406.04</b>	Other expenses	\$149.90
		<b>Total Operating Expenses</b>	<b>\$992.87</b>
<b>COST OF APS T-SHIRTS SOLD</b>			
Inventory Sept. 1, 1992	\$0.00		
Purchases	\$1,325.00		
Less inv. Aug. 31, 1993	\$500.00		
Cost of T-shirts sold	\$825.00		
<b>COST OF PINS SOLD</b>			
Inventory Sept. 1, 1992	\$40.37		
Less inv. Aug. 31, 1993	\$25.84		
Less gifts of pins	\$4.85		
Cost of pins sold	\$9.68		
<b>Cost of items sold</b>	<b>\$834.68</b>		
<b>GROSS REVENUE</b>	<b>\$1,571.36</b>		
		<b>SUMMARY</b>	
		<b>Total revenue</b>	<b>\$2,406.04</b>
		<b>Cost of items sold</b>	<b>\$834.68</b>
		<b>GROSS REVENUE</b>	<b>\$1,571.36</b>
		<b>Total Operating Expenses</b>	<b>\$992.87</b>
		<b>NET INCOME FOR 1993</b>	<b>\$578.49</b>

THE  
ALBERTA PALAEOLOGICAL SOCIETY  
IS PROUD TO OFFER  
**T- SHIRTS / SWEATSHIRTS**



ALBERTA PALAEOLOGICAL SOCIETY  
1993

Once again the Society is pleased to offer T-Shirts and Sweatshirts to its members. We are privileged to have an original colour drawing by Mike Skrepnick, a ceratopsian dinosaur on a province of Alberta background, for this offering. A black and white illustration appears above.

To order your T-Shirt or Sweatshirt fill out the order form below, or a facsimile, and mail to the Society as soon as possible. Quantities of some styles and sizes are limited. At last count, the following sizes were still available: Sweatshirts—medium (1 left!); T-shirts—M,L,XL.

✂ -----

**ORDER FORM  
T-SHIRTS / SWEATSHIRTS**

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

TELEPHONE \_\_\_\_\_

T-Shirts:	Medium	_____	
	Large	_____	
	Extra Large	_____	
	<b>total</b>	_____	X \$15.00/ shirt .....\$_____
Sweatshirts:	Medium	_____	X \$20.00/ shirt .....\$_____
	Shipping and Handling: \$3.00 per shirt	_____	.....\$_____
			Total Enclosed .....\$_____

# Membership Dues for 1994

Dear Member:

This is a **final** reminder that 1994 membership dues should be paid. Dues are now payable by the January, 1994 general meeting. We appreciate your prompt remittance, so that our programs can be properly funded.

Vaclav Marsovsky,  
Membership Director

Please make your cheque or money order payable to: **Alberta Palaeontological Society**

**P.O. Box 35111, Sarcee Postal Outlet  
Calgary, Alberta, Canada  
T3E 7C7**



## Membership Renewal Form for 1994

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Province/State \_\_\_\_\_

Postal/Zip Code \_\_\_\_\_ Telephone (     ) \_\_\_\_\_

Cheque or Money Order                      \$ \_\_\_\_\_     **Single**                      **\$10.00**

Enclosed    \$ \_\_\_\_\_     **Family**                                      **\$15.00**

(Please do **not** send cash through the mail)     \$ \_\_\_\_\_     **Institution**                      **\$15.00**



## Application Form for New Members

Name (please print) \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Province/State \_\_\_\_\_

Postal/Zip Code \_\_\_\_\_ Telephone (     ) \_\_\_\_\_

Do you hold membership in any clubs, groups or professional societies related to geology or palaeontology?      Yes      No     If yes, please list: \_\_\_\_\_

What are your interests? \_\_\_\_\_

What do you wish to learn more about? \_\_\_\_\_

Membership dues are \$10 per single member, \$15 for a family or institution. Dues cover the calendar year from January 1 to December 31. The appropriate dues should accompany application.

The undersigned hereby applies for membership in the Society and, if elected to membership, agrees to abide by the by-laws and regulations of the Society.

Signature \_\_\_\_\_ Date \_\_\_\_\_