

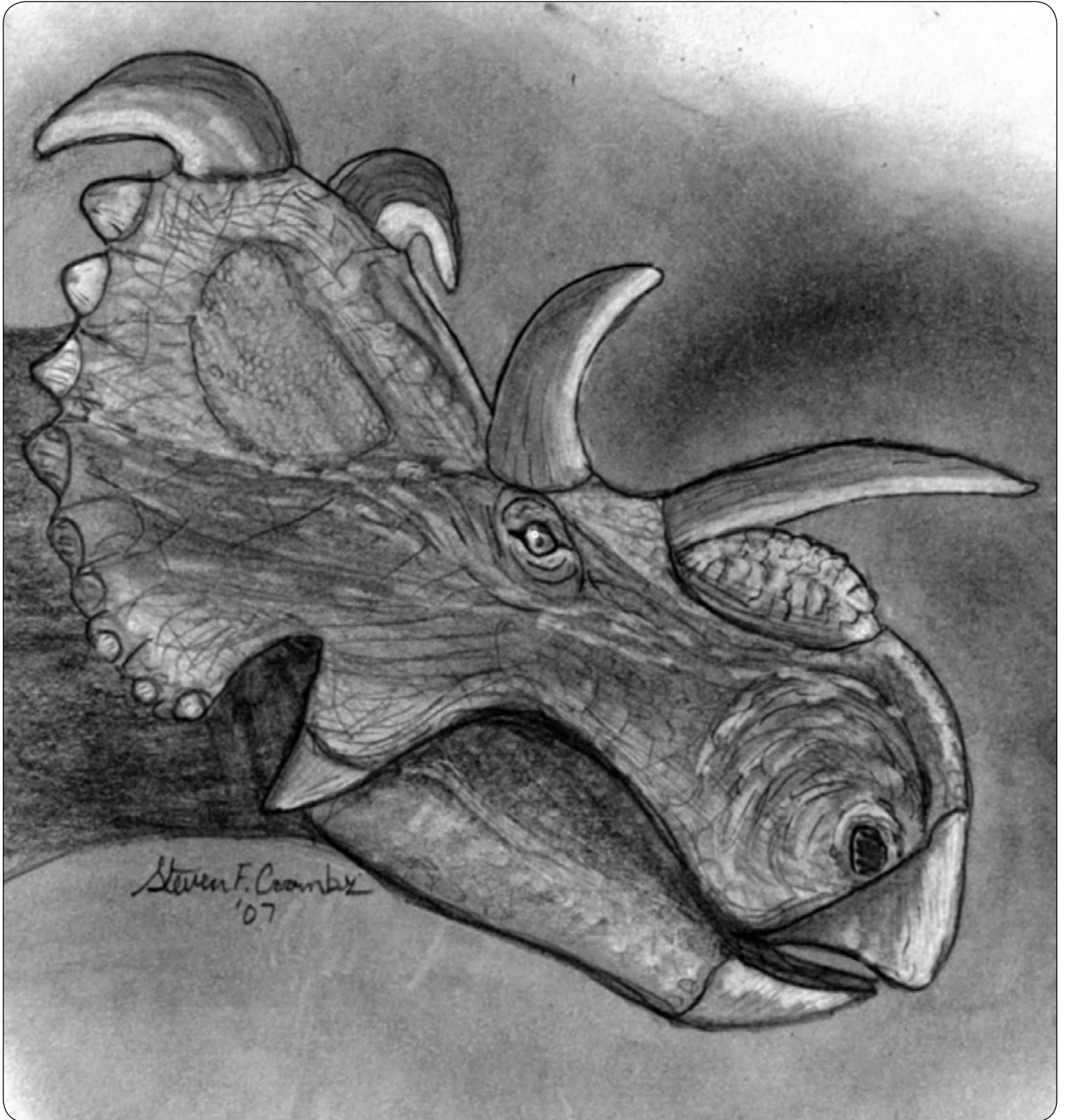
Alberta

Palaeontological Society Bulletin

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† Alberta Palaeontological Advisory Committee

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

- Promote the science of palaeontology through study and education.
- Make contributions to the science by:
 - Discovery
 - Collection
 - Description
 - Education of the general public
 - Preservation of material for study and the future

- Provide information and expertise to other collectors.
- 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. (Please enclose membership dues with your request for application.)

Single membership **\$20.00 annually**
Family or Institution **\$25.00 annually**

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NOTICE: Readers are advised that opinions expressed in the articles are those of the author and do not necessarily reflect the viewpoint of the Society. Except for articles marked "Copyright ©," reprinting of articles by exchange bulletins is permitted, as long as credit is given.

UPCOMING APS MEETINGS

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

June, July, August 2007—No meetings. See Field Trip Updates, page 6.

Thursday, September 20, 2007, Room B101 (across the hall from B108).

Special guest speaker Dr. Peter Dodson, University of Pennsylvania.

Discovering Canada's dinosaurs—Alberta's gift to the world.

See page 7 for details.

ON THE COVER: Artist's conception of the recently discovered ceratopsian dinosaur, *Albertaceratops nesmoi* from the Late Cretaceous of southern Alberta. Graphite on paper, by APS member **Steven Coombs** of Barachois, Quebec. Copyright © 2007. See Steven's new website at www.fossils-illustrated.com

May 2007 election of the Board

By Vaclav Marsovsky, Past President

The annual election of the APS Board was held at the May 11, 2007 Annual General Meeting. We are proud to welcome the elected members to their respective positions (see list of Officers and Directors, page 2). The directorships of Editor, Membership, Field Trip Coordinator and Director at Large will be up for renewal next year.

The Board acknowledges the contributions of **Ron Fortier** and **Dan Mislenovich** for serving on the board as Vice President and Secretary, respectively, in the past year. □

2007 Symposium another success!

By Vaclav Marsovsky

About 100 people attended the 11th Annual APS Symposium on March 17–18 2007. This year's theme was "Discovering Fossils". There was an excellent lineup of speakers and posters. We held the talks at the Jenkins Theatre at Mount Royal College. The weather was good on the day of the symposium and there were no weather-related absences. We had speakers from as far away as Ottawa. Posters and displays filled the hallway on the lower level. Participants viewed the numerous fossil exhibits, including nice displays of Cambrian trilobites from Cranbrook, BC by **Wendy Morrison** and **Dan Mislenovich** and Devonian invertebrate fossils from Hay River, NT, displayed by **Roslyn Osztian**. On Saturday **Dan Quinsey** also presented a workshop to the Paleorangers group, titled "How to be a Fossil Detective".

On the following day, two excellent half day workshops gave participants some hands-on education. The morning workshop presented by **Dr. Brian Chatterton** (U of A) was titled "Hide and seek in the Palaeozoic: trilobite lifestyles, functional morphology and systematics". The workshop was completely full: twenty participants attended.

Dr. Chatterton covered the characters that are used to define the trilobite orders. He described the growth stages from the egg to the protaspid larval stage to the meraspid stage (miniature version of the adult with a reduced number of segments) to the holaspid stage where the number of segments remains the same and the segments just get bigger with each moulting.

We also looked at examples of trilobite traffic jams in underground burrows which may have been used by trilobites to escape predators while the trilobites were moulting. Perhaps the most interesting were the examples of trilobite fakes brought to the workshop by Dr. Chatterton and his graduate students Stacy and Ryan. Dr. Chatterton talked about some of the manufacturing methods he has encountered. The fakes are truly difficult to spot even when they are pointed out. Sometimes the trilobites are composites of different individuals. At other times the whole trilobite is a cast painted with black shoe polish.

The afternoon workshop was presented by a long time supporter of the APS and honorary member, **Dr. Wayne Haglund**, an instructor at Mount Royal College. The workshop was titled "Brachiopods and their Identification". Wayne covered the typical brachiopod morphology and he discussed how the valve shape and surface ornamentation can be used to assign brachiopods to particular orders such as Productida (productids) and Spiriferida (spiriferids).

The workshop ended with a final exam where all participants were asked to identify, by order, twenty-four brachiopods and one curve ball (a bivalve). Everyone found the test challenging. Wayne included crushed (or was it stepped-on?) brachiopods that changed a convex-convex shape (a classification tool) to a convex-concave shape. In hindsight, many seemed like curve balls. Anyone who got a passing grade on this exam has my respect!

The Symposium was sponsored by the APS, Mount Royal College Earth Sciences Department and the Canadian Society of Petroleum Geologists, Paleontological Division. The event could not have taken place without the hard work of many volunteers. Thanks go to all volunteers, speakers and poster presenters who made the event a success. □

NOTICE !

The September 2007 Meeting
will be held on Thursday, September 20

— ONE DAY EARLY —

See page 7 for details

Symposium abstracts still available

If you couldn't attend the 2007 Symposium, you can still catch up on the fun by purchasing an abstracts volume. This year's volume costs only \$8 and includes excellent articles such as Dr. Chatterton's article on spiny trilobites. Pick up a copy at an APS meeting, email giftshop@albertapaleo.org, send your cheque to the Alberta Palaeontological Society at PO Box 35111 RPO Sarcee, Calgary AB T3E 7C7, or phone Mona Marsovsky at (403) 547-0182. When ordering for delivery by mail, please include shipping expenses (\$3 within Canada, more for US and international mail).

News from the dino room

By Ron Fortier, Collection Curator

Just an update on what is happening with the APS fossil collection. The 2007 Symposium has been filed away as another success, so I can turn my attention to the task of dealing with the application for disposition of all the new Alberta fossils. This in itself could take



Limonitic coprolite from the Whitemud Formation, Late Cretaceous, Willows, Saskatchewan. Photo by Ron Fortier.

some time—it took how long just to round up all the documentation for the first disposition? I do have a life after dinosaurs, or that's what my wife tells me.

I think it's time to try and update the filing system. I like the idea of filling out a form (printing clearly)

and then inputting the same information into a database in a one-step format.

A new season is almost here for most of you, so get your eyes into fossil mode by going through the club collection (call Ron Fortier at 285-8041 or email rmfortier@shaw.ca) □

Library notes

By Garren Dugan, APS Librarian

Hi, everyone. I'd like to address the fact that our library consists of different levels of resource material. Many disciplines are available such as geology, palaeontology, palaeobotany, anthropology, etc.

We are always open to receive material from private collections. A widely diverse selection is always welcome.

Please feel free to sign out any books, VHS tapes or interactive CD-ROMs that might interest you. If a certain resource material is not available, I will check my listings and do my best to obtain the requested material. The aforementioned items are available at any APS meeting. □



President Dan's display at the Geological Survey-APS Rock & Fossil Clinic at Fish Creek Public Library in March included a hands-on demo of the role of gastroliths (gizzard stones; inset) in herbivorous dinosaur digestion. Photo by Dan Quinsey.



Fossil enthusiasts arrived in droves to question the scientists at the Rock and Fossil Clinic on March 31. Display tables were set up in the main hall of the Fish Creek Library, which attracted many passers-by. Photo by Dan Quinsey.

Program summary

Friday, May 11, 2007, 7.30 P.M.

Looking for the Wild

Speaker: **Gus Yaki, Calgary Field Naturalists Society and Alberta Palaeontological Society**

Gus' talk took us on a 30,000 mile (48,000 km) journey that he made in 1983, around the perimeter of North America from Newfoundland, south to Florida, across to California, ending up in Alaska on the Pribilof Islands. This was following in the footsteps, so to speak, of Roger Tory Peterson, the famed best-selling author of the Peterson *Field Guides to the Birds* as well as *Rocks & Minerals* and about thirty-six other natural history titles. (The Peterson series did not include a volume on fossils).

In 1953, Peterson had taken his British counterpart, James Fisher, on this circuit. Together, they wrote the book *Wild America*, published in 1955, which Gus read shortly after its appearance.

In the early 1970s, Gus started his own natural history touring company, taking people around the world to all seven continents—in all, to seventy-six

different political entities, to show them the flora, fauna and physiography of this wonderful planet. About 1980, he picked up and again read his copy of *Wild America*. He then realized that he had been to many of the sites that Peterson had visited and had even met a number of the people that Peterson had encountered/visited. Accordingly, Gus planned his trip for 1983, thirty years later. Peterson was keenly interested in participating, but he had so many other commitments (he made eight overseas flights to give lectures, etc., in that time), that he

was only able to join Gus' tour group on the final few days. The book *Looking for the Wild* by Lyn Hancock (Doubleday, 1986) is about Gus' trip.

Biography

Gus Yaki was born and raised in northern Saskatchewan, north of North Battleford. Walking three miles, one way, to school each day gave him lots of time to observe and ponder the natural world around him. As a result, he has been a life-long naturalist, which has resulted in great joy to him and his fellow travellers. At 18, he joined the Royal Canadian Mounted Police, but was with them for less than three years, due to their then restrictive marriage regulations. He subsequently worked five years for Trans-Canada Airlines which since has morphed into Air Canada. He also did a stint at General Motors of Canada at St. Catharines, Ontario before accepting a position with the Federation of Ontario Naturalists. In 1972, he started Nature Travel Service, which he operated until selling it in 1991, although he continued to lead some tours until 2003. Since 1993, he has been living in Calgary, attempting to get to better know the local flora and fauna, past and present. □

www.albertapaleo.org

2007 field trips—update

By Wayne Braunberger

At the time of writing this update all field trips are to go ahead as planned. Be aware that weather, access and site conditions can change, so last-minute modifications or revisions to the field trip plans may occur. All those registered will be notified as soon as possible; however it may be necessary to make changes on the day of the trip. Specific concerns are summarized below:

Trip 2007-1, June 23–24, 2007 Tolman Bridge, Alberta: Part II

Unless there is excessive rain this trip will go as planned. **The registration deadline has passed—it was June 8, 2007.**

Trip 2007-2, July 21–22, 2007 Cadomin/Mountain Park, Alberta

Plan on travelling Friday, July 20. The field trip area is approximately 60 km south of Hinton. Hinton is at least a 5 hour drive from Calgary. It is highly recommended that you travel to Hinton by paved roads from Calgary via Jasper. You can take the forestry roads north from Nordegg, but these roads are very rough and conditions are variable. Hotel/motel accommodation is available in Hinton. There are good campgrounds in the Cadomin area. Field trip stops may have to be modified due to water levels and industrial activity. **The registration deadline is July 6, 2007.**

Trip 2007-3, August 18–19, 2007 Genesee, Alberta.

Access and field conditions remain uncertain and will not be confirmed until before the trip. If the area cannot be accessed the trip will be switched to the Blindman/Red Deer River area. If you have already registered you will be notified of any changes as soon as possible. **The registration deadline is August 3, 2007.**

For more information contact Wayne at (403) 278-5154 or email events@albertapaleo.org. You should have received a field trip registration form with the March *Bulletin*. Copies are available on the APS website (www.albertapaleo.org/fieldtrips.htm).

Please note that all fees are due at the time of registration. Non-members and unaccompanied minors will not be allowed to attend field trips. All participants will be required to read and sign a release form (waiver). Note that the registration deadlines have changed significantly from those in past years. This is to allow for more efficient planning of the trips and timely distribution of information.

Field trip participant responsibilities

It is understood that risk is inherent to some degree in outdoor activities. Before registering for a trip please ensure you understand the risks involved and are prepared to accept them.

- As a participant you are responsible for your own safety and equipment at all times.
- Inform the trip leader of any medical conditions they should be aware of in an emergency.
- Ensure that your previous experience, ability and fitness level are adequate for the trip.

Those of you who participated in last year's trips will have noticed new waiver and medical forms. If you have suggestions for improvement please let me know.

For the 2007 field trips I will be sending the waiver and medical forms to you along with the trip information. This information will be sent to you via e-mail or Canada Post. Please ensure that your addresses are correct and legible when sending in registration forms. When you arrive at the meeting place please have the forms completed so that less time will be spent on paperwork prior to the trip.

All participants are required to have waiver and medical forms fully completed in order to attend the trip. **There will be no exceptions.** All personal information is held in confidence and is ultimately destroyed. □

Upcoming talk

Thursday, September 20, 2007, 7:30 P.M.
Mount Royal College, Room B101 (opposite B108)

Discovering Canada's Dinosaurs—Alberta's Gift to the World

Speaker: **Dr. Peter Dodson,**
University of Pennsylvania

From *Albertosaurus* in 1884 to *Albertaceratops* in 2007, Alberta has consistently provided abundant skeletons of dinosaurs over the years. Because of this, Canada is one of the top five dinosaur-producing countries in the world. We review the discoveries and the discoverers, from Joseph Tyrrell, who gave his name to the world-famous museum in Drumheller, to Barnum Brown in New York and the Sternbergs in Ottawa and Toronto, to Phil Currie and associates today. The peak of Alberta's dinosaur rush was during the decade of the 1910s, and more than three-quarters of the dinosaurs we know today had been reported by 1940, yet discoveries of new kinds continue to the present time. With the establishment of the Royal Tyrrell Museum of Palaeontology in 1985, Alberta's fossil beds are perhaps the most intensively sampled anywhere in the world.

Biography

Peter Dodson holds three degrees in earth sciences: B.Sc. University of Ottawa, 1968; M.Sc. University of Alberta, 1970; Ph.D. Yale University, 1974.

He has spent his entire career as a gross anatomist at the University of Pennsylvania School of Veterinary Medicine, and as a dinosaur palaeontologist in the Department of Earth and Environmental Science at U. Penn. He is also research associate at the Academy of Natural Sciences of Philadelphia. He has done extensive fieldwork in the western United States and at Dinosaur Provincial Park in Alberta, where he did research for his master's degree.

In 1981 he discovered a new horned dinosaur in Montana, which he described as *Avaceratops lammeresi* in 1986. Since 1995 he has visited China and India, and has participated in field projects in Madagascar, Egypt, Argentina and China. He is co-describer of a gigantic sauropod from Egypt, *Paralititan stromeri*, named in 2001 by a research team from the Univer-

sity of Pennsylvania; of the diplodocoid sauropod *Suuwassea* from Montana in 2004, and of the basal neoceratopsian *Auroraceratops* from China in 2005.

His work has been supported by grants from the National Science Foundation, the National Geographic Society, the Pew Charitable Trusts and the University of Pennsylvania Research Foundation. He is co-editor of *The Dinosauria*, University of California Press, 1990, 2nd ed. 2004; author of *The Horned Dinosaurs* (Princeton University Press, 1996); and of several children's books, including *An Alphabet of Dinosaurs* (Scholastic 1995). He is currently working on a book on the dinosaurs of China. □

Rwanda volcano expedition planned for 2008



By Philip Benham

Iam hoping to participate in an expedition-style tour to Rwanda and the Democratic Republic of Congo in January 2008. The tour includes a trek and a number of nights camping in the crater of Mount Nyiragongo, one of the few volcanoes in the world with a continuously active lava lake.

The tour also includes hikes to see the "Gorillas in the Mist," Lake Kivu and Goma (which was partially destroyed in 2002 when lava flowed through the town). There may be additional opportunities to visit Akagera Park and do a conventional safari and hike in Nyungwe Park, one of the largest high altitude rainforests with amazing primate diversity, birds and giant flying squirrels.

The expedition will likely run from January 15–22, 2008. I hope to be bringing my oldest son Peter (who will be 16 at that time). If I can get two more people to join there will be a small discount.

The expedition is led by professional volcanologist Tom Pfeiffer who runs such tours all over the world. You can visit www.volcanodiscovery.com for more information (they have some awesome volcano pics and brochures detailing the itinerary) or phone (691-3343) or email me (philip.benham@shell.com). □

A brief history of the Alberta Palaeontological Society

By Mona Marsovsky

The Alberta Palaeontological Society (APS) is a group of amateur and professional palaeontologists sharing a common interest in the science of palaeontology. The goals of the Society are stated on Page 2 of every issue of the *Bulletin*.

The Society was officially founded in Calgary, Alberta, Canada, in 1986 by a group including **Leslie Adler**, **Geoffrey Barrett**, **Wayne Braunberger**, **Lyle Hartwig**, **Peter Meyer**, **Harvey and Steffie Negrich**, and **Donald Sabo**. All were members of the Calgary Rock and Lapidary Club who decided that they wanted to create a group that would focus on palaeontology. They met as an informal group for more than two years before taking steps to officially form a society. On April 18, 1986, the Alberta Palaeontological Society became incorporated as a non-profit society under the Societies Act of the Province of Alberta.

For the first year as a non-profit society, the APS met informally at members' homes. Starting in the second year and continuing to the present, **Mount Royal College** in Calgary generously allowed the APS to meet in one of its classrooms for the monthly Friday evening meetings without cost. Over the years, the support from the College has been exceptional. Mount Royal College, especially **Dr. John Cox**, **Dr. Wayne Haglund** and **Mike Clark** of the Department of Earth Sciences, also deserve many thanks for their on-going support of the APS and its many projects.

From the beginning, the APS implemented its annual calendar of monthly meetings from September to May and summer field trips, one in each of June, July and August. In addition, the APS has hosted special lectures for Society members and the general public provided by such world famous palaeontologists as **Dr. Philip Currie**, **Dr. Elizabeth Nicholls**, **Dr. Paul Sereno** and **Dr. Peter Ward**. All APS meetings are open to the general public at no charge. During the summer field trips, APS members visit sites in Alberta, but have also ventured to other

locations such as Montana, Saskatchewan, British Columbia and the Northwest Territories. Field trip guides, provided to each participant, describe the geology, palaeoenvironment and fossils of the area.

The APS quarterly members' newsletter, called the *Bulletin*, started publication under editor Geoffrey Barrett in 1986. Wayne Braunberger was editor from March 1989 to September 1990. **Heather Whitehead** assumed editorial duties in December 1990 until **Howard Allen** took over in December 1991. The *Bulletin* provides information on the activities of the Society, reports on the local palaeontological scene, describes upcoming meetings and field trips

and includes numerous articles submitted by members on a variety of palaeontological topics. One year the *APS Bulletin* won the Gem and Mineral Federation of Canada Club Newsletter Contest award.

In addition to hosting APS monthly meetings and allowing the Society to use Mount Royal College's video equipment, the College has allocated space for the APS to store two cabinets. One of these contains the APS library. The library contains newsletters from other palaeontological organizations, palaeontological books and articles which APS members are free to borrow.

The APS started its collection of fossils for education of members even before the Society became officially incorporated, under the stewardship of Harvey Negrich. In 2001, the APS application for Custodianship of Palaeontological Resources from the Province of Alberta (spearheaded by **Vaclav Marsovsky**) was approved for the APS fossil collection. This allows the Society to continue to use its fossil collection for education of its members and the general public.

Ron Fortier currently curates the APS collection. The collection contains over 250 fossils including vertebrate, invertebrate and plant fossils, as well as ichnofossils (tracks and trace fossils) from Alberta and around the world.

Kris Vasudevan oversaw the preliminary development of the website in 1999. Vaclav Marsovsky finalized and launched it (www.albertapaleo.org) and continues to update it as webmaster.



Kris Vasudevan also initiated the annual Symposium in 1997. It began as a few members being invited to bring posters and fossils for display at the January meeting. For three years, this event was held on the regular APS meeting night with an ever-increasing number of participants, until 2000, when a full Saturday was reserved for the event.

The current format has seven or more speakers presenting 20-minute presentations and one keynote speaker presenting an hour-long talk. Kris Vasudevan, and more recently **Philip Benham**, have arranged a variety of speakers, ranging from amateurs, palaeontology students and professors from western Canadian universities, to professional palaeontologists, including scientists from nearby museums and the Geological Survey of Canada. Keynote speakers have been recruited from places as far away as Montana, Oregon and the Yukon. During this event, numerous posters from APS members, palaeontology students and professionals line one of the hallways at Mount Royal College.

A volume of abstracts, describing each talk and poster, is compiled and made available for purchase. Since this event's inception, the Department of Earth Sciences at Mount Royal College has co-sponsored the event, providing the venue, tables and chairs and advertising for the event. Generous financial support from **Shell Canada** and the **Canadian Society of Petroleum Geologists** (CSPG), Paleontological Division, has allowed the APS to hold this event for the general public without requiring an admission fee. Since March 2000, Vaclav Marsovsky has organized two half-day palaeontology workshops for APS members and the general public on the second day of the Symposium.

For the past few years, **Dan Quinsey**, our current President, has presented palaeontology talks to school children and youth groups, on request. Since 2002, the Society, under the leadership of Vaclav and **Mona Marsovsky**, has been organizing volunteers to assist **Dr. Donald Brinkman** of the Royal Tyrrell Museum of Palaeontology. During several Saturdays in the winter, APS members, with the support of Mount Royal College, have been meeting to retrieve tiny fossils from the sediment excavated by Dr. Brinkman as part of his research into the animal life and environment during the Late Cretaceous in Alberta. APS greatly appreciates the support of Mount Royal College, which provided microscopes and facilities, for this project. □

Ceratopsian Symposium at Royal Tyrrell Museum September 22–23, 2007

Ceratopsians (horned dinosaurs) are anatomically unique animals with a 95 million year evolutionary history extending from the Late Jurassic to the end of the Cretaceous. During the past century, ceratopsians have been the basis for innovative and ground-breaking palaeobiological and evolutionary interpretations that relate to many other dinosaurs. More recently, studies of ceratopsian biomechanics, growth, diversification, biogeography and other aspects have resulted in an explosion of information about this intriguing group.

On September 22–23, 2007, the Royal Tyrrell Museum in Drumheller, will host the first-ever Ceratopsian Symposium. The goal of the symposium is to bring together 200 palaeontologists, geologists, and palaeontological enthusiasts to share the results of their recent research and their interest in ceratopsians. Approximately 75 contributors will offer a variety of oral and poster presentations. Keynote speakers **Peter Dodson**, **Catherine Forster**, **David Eberth** and special guest **Robin Mackey**, will speak on ceratopsian evolution, biology and ecology, and preservation. A published abstract volume and book presenting the results of the symposium will follow. The symposium is being convened by **Donald Brinkman**, **Brenda Chinnery-Allgeier**, **Michael Ryan**, **David Eberth** and **Philip Currie**.

The symposium coincides with the opening of a new ceratopsian dinosaur exhibit at the Royal Tyrrell Museum that will feature many new kinds of horned dinosaurs from Alberta. Other significant events associated with the symposium include:

- Ice-breaker, Royal Tyrrell Museum, on the evening of Friday, September 21.
- Viewing of new specimens, including Alberta's newest ceratopsians.
- Barbecue at the Royal Tyrrell Museum on Saturday, September 22.
- Post-symposium field trip to Dinosaur Provincial Park (Monday, September 24).

For further information about this event and registration please go to www.tyrrellmuseum.com and click on the Horned Dinosaur Symposium Button or contact **Don Brinkman** at (403) 820-6214. □

Manitoba Paleontology Symposium set for September 27–29, 2007

This is the first year the Manitoba Paleontology Symposium (MPS) is being held to promote paleontology within the province of Manitoba. The symposium is in the town of Morden and will span over two days with a field trip scheduled for the final day. The aim is to promote the exchange of research between palaeontologists and geologists internationally. Presentations from researchers will be in platform and poster format. The emphasis for presentations will be on related or correlating research of Manitoba including Manitoba palaeontologists' research outside of the province.

The MPS will consist of lectures with modern technology, catering services, a field trip to the Manitoba Escarpment, a printed abstract and paper volume and promotional material. A Paleo Expo will also be held in conjunction with the MPS with booths promoting lab supplies, palaeo tools, publishing companies and fossil replicas.

Researchers, graduate and undergraduate students are invited to submit papers for platform and poster presentations. Deadlines are June 25, 2007 (talks & papers) and July 23, 2007 (posters & abstracts). Registration fees range from \$100 to \$225. If you are interested, see www.discoverfossils.com and click the Symposium link for information and registration forms. □

Texas shark teeth book reprinted

The excellent book by Bruce J. Welton, Ph.D. and Roger F. Farish, *The Collector's Guide to Fossil Sharks and Rays from the Cretaceous of Texas* is being reprinted due to popular demand. Several APS members purchased this book during its first print run, and it comes highly recommended, even if you never expect to collect Texas shark teeth. The introductory chapters alone are valuable, and the beautifully reproduced plates and descriptions are relevant to specimens from many localities around the world.

Price for the coil-bound book is US\$24.95, plus the usual taxes, shipping & handling. To order, see their web page at www.texassharks.org. □

Locality slips keep specimens under control

By Howard Allen

We've all got them in our collections: bags and pill bottles full of fossils that were collected last summer or last decade. We find them gathering dust in the back of a drawer or in a box, in some forgotten corner. You meant to catalog them after you got them home—but you forgot.

Now, you're gazing into a bag of anonymous brachiopods or turtle shell fragments and the light bulb hovering over your head is cold and dark. You've been in the badlands a dozen times since, and you're not quite sure where you got them. You keep a field notebook, but you found brachiopods on four different trips, and you're not sure which trip you found these on. Maybe you labelled the bag "Canyon Creek". *Where* at Canyon Creek? There are a dozen fossiliferous exposures where they might have come from. Oh! You recorded GPS coordinates in your field notes! But which of the dozen bags came from which of the dozen GPS waypoints? Our memories are not as good as we like to think they are. We've had it hammered into us time and again: "Location is *the* single most important thing to record in your collection catalog."

I've been as guilty of this as the next person, so last year I decided to do something about it and came up with a method that works for me. It's quick and easy, and gets the job done. I made up a page of "locality slips" that I can print off and cut up prior to the collecting season (I've posted the page as a PDF file at www3.telus.net/public/howallen/downloads/index.htm).

I cut up a bunch of slips ahead of time—there are 28 slips to a printed page; use the trim marks to guide the razor knife—and I store them in a small zip-lock bag that's tucked into a pocket in the back of my field notebook. The slips are quick to fill in and hold the basic information needed to properly record a collecting locality. The fields are mostly self-explanatory. "E" stands for the easting coordinate of the UTM system, "N" for northing. *Tip*: if you normally use the default GPS datum WGS84, check

the NAD83 box, as the two data (“datums”) give the same coordinates.

I designed the slips with GPS recording in mind, but they will work just as well if you carry a topographic map in the field. Any additional data can be recorded in your notebook, or jotted on the back of the slip. The idea is to quickly fill in just the bare necessities; almost any other locality data can be reconstructed at a later date, as long as the precise geographic locality is recorded.

Put a slip into each bag or pill bottle with your specimens, and you’ll always keep the crucial locality data *with* the fossils. Then, if it turns into months or years before you get around to opening the bag, you’ll still know exactly where the specimens came

from. If—God forbid—you get run over by the Number 19 bus before you’ve had a chance to catalog the specimens, and your relatives decide to donate your collection to a museum, the museum curator will know

precisely where the specimens came from, making them infinitely more valuable than a nameless bag of fossils that might otherwise end up as gravel on the museum parking lot. Even if you lose your field notes or accidentally delete your GPS waypoints, the locality data will stay with the specimens until you can properly catalog them. □

Vancouver Paleontological Society field trips schedule for 2007

The VanPS is inviting APS members to join their society and attend field trips this summer. Membership is \$35.00 annually (single or family). For information, contact Heidi Henderson, fossilhunter@shaw.ca or Ken Naumann, knaumann@langara.bc.ca or write to:

The Vancouver Paleontological Society
Centrepoint Post Office Box 19653
Vancouver BC V5T 4E7

A membership form can be downloaded from the

society’s web page at www.vcn.bc.ca/vanps/page-about/about-frame.html (scroll to the bottom of the page). Field trips scheduled for this year include:

June 28–30, McAbee, BC

July 20–22, Olympic Peninsula, Washington State

August 27–September 1, Tyaughton, BC

September 29–30, Princeton, BC

October 5–9, Green River, Wyoming. □

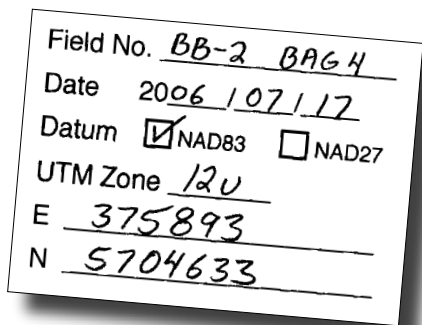
My technique for numbering specimens

By Howard Allen

Adding catalog or accession numbers to fossil specimens is a mandatory step in curating a collection. But many methods are messy, difficult and time-consuming: so much so that the job is often put off for too long.

Over the decades that I’ve been collecting fossils, I started with the classic dab of white enamel paint (tiny glass bottles of Testor’s model paint, as I recall) applied with the end of a paper match or a toothpick. Of course, after dabbing a few dozen specimens, I would come back a month later to find that the little—expensive—bottle of paint had solidified because the metal caps were notoriously poor seals (all the better to sell more little bottles of paint!) Then there was the India ink number, applied with a steel pen nib that constantly skipped, blobbed, or produced a goofy-looking number because the underlying surface was uneven, or my hand was unsteady.

Later, I took to using white correction fluid (Liquid Paper®/Wite-Out®) which was much more convenient than paint, but again, the little bottles are notorious for drying up just when you need them. As well, rumours abounded that the correction fluid was prone to cracking and flaking over time. While I never experienced this myself, the rumours made me reluctant to depend on the method for large numbers of specimens. I abandoned the steel pen nibs in favour of technical drafting pens, but again, the chronically irksome habit of the India ink solidifying in the pens unless they were meticulously cleaned



after each use—a tedious and time consuming chore—gave me a deep and abiding hatred for drafting pens. Even when dry, the correction fluid has a chalky consistency that tends to clog pen tips.

Over the years I had read descriptions of gluing bits of numbered paper to specimens, but they had always struck me as a “second best” technique: paper yellows, glue softens or becomes brittle, typewriters (or the accursed ink pens) produce big, clunky numbers that have to be protected with varnish or nail polish or who knows what? No doubt another slow and aggravating chore.

Enter the computer age! Finally there was a way to produce legible numbers in nearly any size or typeface, and all automatically incremented and printed in any quantity. This, I felt, was an angle worth pursuing, as it would pay dividends in convenience and speed. After some experimenting with different materials, I have arrived at what I feel is a good technique, and I have now employed it on many hundreds of specimens.

The numbers themselves are produced with trivial ease, using a spreadsheet program to automatically increment the numbers. The spreadsheet cells are formatted to increment the numbers in columns so that the row height is just enough to allow separation of the numbers with a single horizontal razor-knife cut, with no trimming. I print the numbers in a clean, sans-serif font—Helvetica, Arial, Lucida, Futura, etc.—that is clearly legible at two type sizes: 4-point, for small specimens, and 7-point, for big specimens.

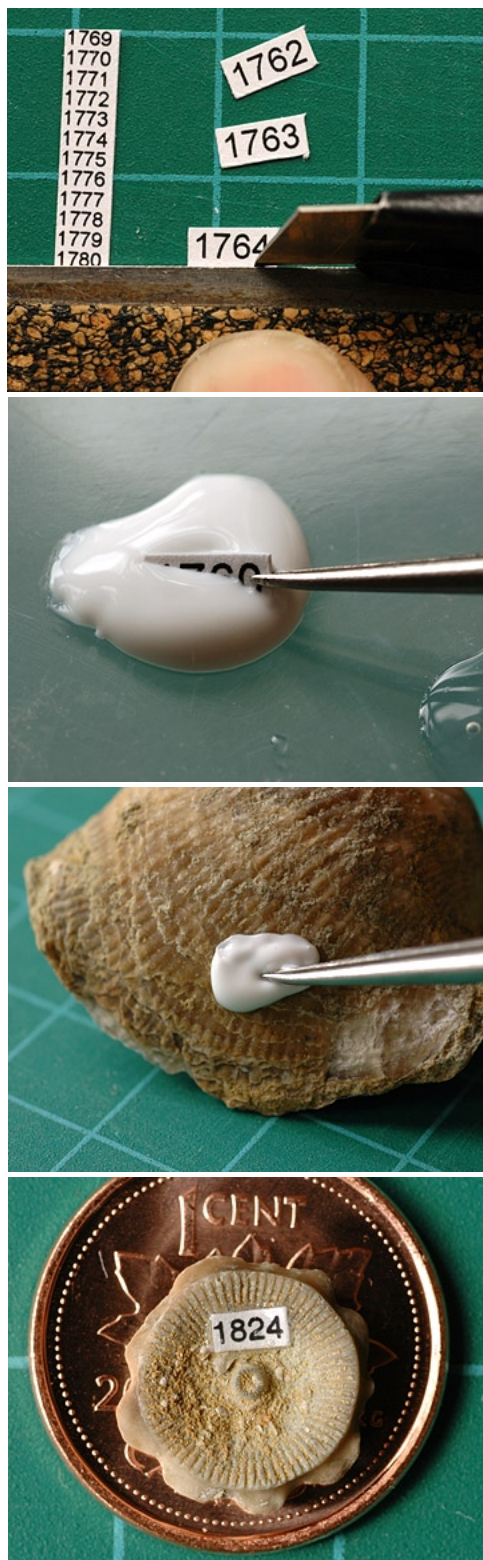


Figure 1. (Top): cutting numbers. 4-point numbers on left, 7-point on right. Keep a sharp razor or X-acto® knife blade for clean cuts. (2nd from top): dipping both sides of the number in Weldbond® glue. (3rd from top): applying number to specimen. Press the number onto the specimen with light taps from the tweezers. (Bottom): The final result. A 4-point number applied to a crinoid ossicle, penny for scale.

I print a similar numerical sequence in each type size, and use whichever size is appropriate for each fossil (being careful to discard the same number of the alternate type size, to prevent duplication of numbers!). The numbers are printed with a laser printer onto a high quality, acid-free, archival paper to ensure long life. An example is Weyerhaeuser (now Domtar) First Choice®. The 600 dpi resolution of the printer is sufficient to produce perfectly legible type at 4 points (approximately 1 mm in numeral height), and would probably work for 3-point or even smaller type, but these sizes would approach the limits of manual dexterity when applying the numbers and would require magnification to read, even for someone with good eyesight.

For applying and sealing the numbers to the fossils, I have found that a general purpose PVC glue sold under the trade name Weldbond®, manufactured by Frank T. Ross & Sons, of Toronto, works well (Figure 2). Weldbond is an industrial-strength version of the Elmer's or Lepage's white glue we all used as kids. It is similar in being non-toxic, odourless and easy to clean up in water. It also stays viable for years in its bottle, provided you remember to close the top. You can buy Weldbond in hardware and hobby stores. The keys to its value in specimen numbering are that it dries clear, it doesn't affect the toner (“ink”) or paper, becomes quite water-proof when dry, and adheres well to all sorts of rock surfaces.

Of course, I wanted to be very sure that whatever numbering materials I used would be easy to apply and,



Figure 2. Weldbond glue, stuff of choice for sticking and sealing numbers.

most importantly, resistant to degradation. To test the materials, I applied several numbers to a piece of rock and placed it outdoors—in conditions that no curated specimens should be expected to endure.

In April, I placed the numbered rock sample on my backyard deck, against a south-facing wall and left it there for six months, until late November. The numbers were exposed daily to direct sunlight (weather permitting, of course). In June, the test specimen was placed in a pail of rainwater, where it sat, completely submerged, for over a week. For the balance of the test period, the specimen was exposed to whatever wet/dry cycles came its way. It experienced nights of below-freezing temperatures in April and November.

At the end of the trial, I examined the numbers under a binocular microscope and could discern no changes whatsoever: the paper had not changed colour, the number had not faded, the Weldbond was still hard, clear, colourless, and well-attached to the rock matrix. Of course, this trial did not constitute scientific testing, but as a practical demonstration, I feel that the materials perform more than adequately for the purpose of an amateur collection, especially one that is kept in the conditions that would be expected in a typical home—even one that suffered catastrophic flooding.

Applying the number to the specimen (Figure 1) is a four-step process:

1. —Cut out the number. I use a sharp razor knife and cutting mat to cut the numbers into vertical columns. Cut as close the left and right sides as possible, to keep the number tags compact. Then, using horizontal cuts, separate the numbers from the strip. For a large number of specimens, I cut eight or ten numbers at a time: any more than this and you risk getting them mixed up or lost during a sneeze.

2. —Dispense a small dab of Weldbond onto a non-stick surface; I use a plastic lid from a coffee or other food can. When the lid gets covered in dried dabs of glue, just bend it and flake the dabs off. A spot about 1 cm in diameter is plenty for the number

of specimens you can label before the glue starts to dry and becomes unusable.

3. —With a needle-nose tweezer, grab a paper number at one end, then dip it into the glue spot. Completely coat both sides in glue. The glue is opaque when wet, so make sure you keep track of which side the number is printed on!

4. —Place the Weldbond-coated number on the specimen. I choose the least conspicuous place I can find on the specimen, keeping in mind which side is going to be hidden if placed on display. Use the tip of the tweezer to lightly press the wet number onto the rock surface, so that the glue sticks well. Keep a piece of tissue or a rag handy to wipe off the tweezer tip before grabbing the next number.

Set the specimens aside to dry. The Weldbond forms a skin in a few minutes and becomes completely clear and hard in less than an hour. The result is a neat, legible number that is completely sealed and needs no further varnishing or treatment. □

Fossils in the news

CBC News Online, April 12, 2007

Protein study reveals *T. rex* was a little bit chicken

MONTANA—Scraps of collagen protein recovered from the leg bone of a Montana *T. rex* skeleton support the idea that birds evolved from dinosaurs. The samples, extracted from the dinosaur bone and analyzed with a mass spectrometer at Harvard Medical School, were shown to be collagen, the structural protein component of bones. The research team, which included Mary Schweitzer of North Carolina State University and Lewis Cantley and John Asara of Harvard, was able to identify seven protein sequences in the collagen and compared them to sequences in modern animals. The sequences matched those of both chickens and amphibians.

Palaeontologist Jack Horner, of Montana State University, whose excavation team found the *T. rex* skeleton, considers the results to be “very, very exciting.” His group is organizing more expeditions to Montana and Mongolia in the hope of finding more protein-bearing dinosaur bones.

The Calgary Herald, April 4, 2007

Ancient whale skeleton found in Italy

MONTALCINO, Italy—The nearly complete skeleton of a whale and associated marine fossils have been excavated from an Italian vineyard in the province of Tuscany. Online reports reveal that the fossils were discovered by amateur palaeontologist Simone Casati, who was exploring the vineyard with permission of the landowner. Casati, realizing the quality and scale of his find, reported the discovery, which has been excavated by a team from the University of Florence and the Museum of Natural History of the Mediterranean, in Livorno. The whale, about 10 m in length, lived during the Pliocene Epoch, about 4 million years ago, when most of Italy was under the sea.

The National Post, April 13, 2007

Dinosaur hunter says his discovery hijacked

HVAR, Croatia—University of Alberta palaeontologist Michael Caldwell is crying foul after dinosaur footprints discovered by him and a team of Croatian researchers were claimed and written-up by a second team from the University of Zagreb, who scooped the discoverers. The fossil trackway was found by Caldwell's team on a shoreline on the island of Hvar in 2004, while searching for fossils of marine reptiles, and informally reported to the local press. The tracks are estimated to be 95 million years old (early part of the Late Cretaceous) and probably made by a titanosaur. Caldwell was shocked to see a paper on his group's discovery in the December 2006 issue of the journal *Cretaceous Research*, issued while Caldwell and company were preparing their own paper. Caldwell hopes that "[academic] sanctions will be forthcoming" against the usurpers.

The National Post, April 24, 2007

Eight-metre-tall organism that ruled Earth 400 million years ago, a "humongous fungus"

CHICAGO—*Prototaxites*, a weird fossil first described from Gaspé, Quebec, in 1859 by Canadian palaeontologist Charles Dawson (who concluded it was "rotted wood"), has been a subject of curiosity ever since its discovery. It has since been found in Silurian and Devonian rocks in numerous localities around the world and variously interpreted as an

alga, a lichen, or a fungus. Now, researchers from the University of Chicago and several other institutions, through painstaking studies of thin sections, deciphering Dawson's "completely illegible scrawl" to find historic localities and performing carbon isotope studies, have determined that *Prototaxites* was, in fact, a gigantic fungus. Specimens indicate that *Prototaxites* grew as vertical pillars up to 8 m tall and would have been the most prominent organism on the landscape between 420 million and 350 million years ago. For an excellent, illustrated discussion of the *Prototaxites* controversy, see www.xs4all.nl/~steurh/engprot/eprototx.html

The National Post, January 25, 2007

Winnipeg anthropologist discovers 56-million-year-old fossilized mammal skeleton

WYOMING—Anthropologist Mary Silcox, of the University of Winnipeg, working with a team of American researchers, has reported the remains of two species of plesiadapiform primates in rocks of the Bighorn basin, near Yellowstone Park. These primates, named *Ignacius clarkforkensis* and *Dryomys szalayi* are the earliest primates known from the fossil record. The new fossils are much more complete than previous fragmentary material, showing that the animals were in fact primates, rather than some other small arboreal mammals, as some workers had conjectured.

The Calgary Herald, May 23, 2007

Dinosaur "feathers" claim doubted

SOUTH AFRICA—A study led by University of KwaZulu-Natal researcher Theagarten Lingham-Soliar has cast suspicion on the supposed "proto-feathers" preserved on a specimen of *Sinosauropteryx* from Liaoning, China. Microscopic examination of a new specimen—also from China—has convinced Lingham-Soliar and colleagues that the "proto-feathers" are really fibrous remains of collagen protein that were part of a frill of skin running down the dinosaur's back, and nothing to do with feathers. Proto-feathers are supposedly an intermediate link between featherless early dinosaurs and feathered forms, such as *Archaeopteryx*.

[Thanks to Georgia Hoffman and Phil Benham for clippings and news links -ed.] □