

Alberta

*Palaeontological
Society
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Harold D.R. Lowe 1886–1952

Remembering
a forgotten name in
Alberta palaeontology

ALBERTA PALÆONTOLOGICAL SOCIETY

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Vice-President	Vaclav Marsovsky	547-0182
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Membership	Vaclav Marsovsky	547-0182
Program Coordinator	Philip Benham	280-6283
Field Trip Coordinator	Wayne Braunberger	278-5154
Director At Large	(Position vacant)	

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APAC†	Howard Allen	274-1858
APS Book Project	Wayne Braunberger	278-5154
Education	Dan Quinsey	247-3022
Fossil Collections	Howard Allen (interim)	274-1858
Fund Raising	(Position vacant)	
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Public Outreach	Dan Quinsey	247-3022
Social	Paul Dugan	934-9599
Symposium	Dan Quinsey	247-3022
Website	Vaclav Marsovsky	547-0182

† Alberta Palaeontological Advisory Committee

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. (Please enclose membership dues with your request for application.)

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

THE BULLETIN WILL BE PUBLISHED QUARTERLY:

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UPCOMING APS MEETINGS

Meetings take place at 7:30 P.M., in Room B108,

Mount Royal College: 4825 Mount Royal Gate SW, Calgary, Alberta.

Friday, April 18, 2008—Speaker: Dr. Tanya Samman, Mount Royal College.
Geoscience and Mythology (See Page 8).

Friday, May 9, 2008—Dave Watt, Rocky Mountain Adventure Medicine.
Wilderness Safety and First Aid (See Page 9).
APS Annual General Meeting (See Page 4).

June, July, August 2008—No meetings. See Field Trip schedule, Page 41.

ON THE COVER: Our special feature article begins on Page 10. Photo courtesy of Dinosaur Provincial Park archives, Design by Howard Allen. Copyright ©.

From the Desk of the President

By Dan Quinsey



have matured as well. Our growth can clearly be attributed to the dedication, enthusiasm and perseverance of our members. I am energized when members share their passion in the building and strengthening of our Society.

It thrills me to be involved in the management and governance of the Society. I encourage all members to leap forward and share this experience. It is certainly worthwhile and gratifying.

Greater demands on the Society call for accountability and governance, which has resulted in greater challenges for the Board of Directors. The Board is always looking for ways to improve the Society both externally and internally. To achieve this, we must periodically review our model and improve on it where we can.

But we can't do this without our members. We need you today more than ever!

We need you to continue sharing your expertise and enthusiasm. We need you to volunteer, present, write, and facilitate. We need your service on the Board and Committees. And to our past leaders, we need you today even more. Your sage advice and guidance will steer those of us who must continue to walk in your shoes, advancing the Society.

We are approaching our Annual General Meeting in May with the unveiling of enhanced bylaws and increased advocacy for our Society. We will also be electing members for various Board positions. This is your chance to get involved, to take the journey with us.

The Board will continue to cultivate and develop the Society. We will strive to lead by example. There

is a new energy surrounding the APS, and it's powerful!

Thank you,

A handwritten signature in cursive script that reads "Dan Quinsey".

Certificate of Appreciation Award

By Dan Quinsey

The Certificate of Appreciation Award is presented as a token of our (APS) appreciation to those individuals or groups who have made significant contributions to the science of palaeontology by: discovery, collection, curation and display, education of the general public, and preservation of material for study and future generations. If you would like to nominate someone for this award, please contact Dan Quinsey (see Page 2).

As a rule, the Board does not give this award to members serving on the Board. However, I would like to take this time to thank all of our Board members for the hard work they have put into several projects during the past few years. In particular, I would like to focus on **Wayne Braunberger** and **Howard Allen**.

Wayne has been heading the Book Project and has been involved in the writing, editing, research, field research, and legal aspects of this project. Wayne has also been working on the Bylaws of the Society, organizing symposium presentations, and organizing the field trips of the Society.

Howard Allen puts together and distributes the *Bulletin* for the Society on a quarterly basis. Howard has also been involved in the formatting and editing of the Book Project, working on the Bylaws of the Society, and assembling the Symposium Abstract Volume. Howard is also our APAC representative, and has recently taken on the task of organizing the APS fossil collection.

If I had some fireworks, this is where I would set them off. Thanks for your commitment and a job well done, Wayne and Howard. □

Notice of Annual General Meeting of Members

To the Members of the Alberta Palaeontological Society:

Take notice that the Annual General Meeting of the Members of the Alberta Palaeontological Society will be held at Mount Royal College room B108, on Friday, the 9th day of May, 2008, at the hour of 7:30 o'clock in the evening, local time, to deal with the following business to be brought before the Meeting:

- Election of the Board positions of: President, Vice-President, Secretary, Treasurer, Membership Director, Editor, and Field Trip Coordinator.
- Treasurer's presentation of the Audited Statement of the financial position of the Society.
- Secretary's presentation of the Audited Statement of the books of the Society.

Also, take notice that it is intended to propose the following special resolutions:

- Motion: to eradicate the position of Director at Large from the list of Directors of the Alberta Palaeontological Society.
- Motion: to rescind the current Bylaws of the Alberta Palaeontological Society.
- Motion: to adopt the revised Bylaws of the Alberta Palaeontological Society dated February 6, 2008.

Dated this 6th day of February, 2008. By order of the Board of Directors of the Alberta Palaeontological Society.

Dan Quinsey
President □

Proposed Bylaws Revisions

By Dan Quinsey

The Alberta Palaeontological Society Board of Directors have spent many hours reviewing the current Bylaws of the Society and are proposing various revisions to address issues of risk management,

clarification, and minor issues of grammar, syntax and linguistic usage. As a result, the sections titled *Committees*, *Cause*, and *Code of Conduct* have also been added.

The Board feels Bylaws as revised and passed by the Board February 6, 2008 allows both the Board of Directors and Membership the ability to efficiently administer the operations of the Society without prejudice. The Board strongly recommends the Members unanimously pass the motion to adopt the revised Bylaws of the Alberta Palaeontological Society.

To simplify the process, the proposed changes listed below have been generalized. If you have misplaced your Membership Handbook and require an original set of the APS Bylaws and/or you would like to see the proposed Bylaws in their entirety, please contact our Editor (see contact information on Page 2).

Proposed APS Bylaw revisions

Entire Document: Corrections to various grammar, syntax, and linguistic usage. Wording to replace "legalese" in many places has been adopted. Bullets, numbering and the Table of Contents have also been changed to reflect revisions.

- 1.1 The Society**—Change "not-for-profit" to "non-profit"
- 1.3 Definitions**—Add Cause, Chairperson, and Constituted. Also, many definitions have been reworded.
- 2.1 Qualification**—Add "The Board is not obligated to detail reasons for declining an application for membership."
- 2.2 Voting**—Revise "Voting for the election of the Board shall be done by secret ballot for each position of Officer or Director where more than one Member is nominated; otherwise, all Members nominated shall be elected by acclamation."
- 2.3 Termination**—Delete "until reinstalled by payment of the membership fee". Revise wording for clarity.
- 2.4 Fees**—Add "Members in arrears for membership fees must re-qualify for membership in accordance with Article 2.1."
- 2.5 Award Memberships**—Add "This membership is in effect for the lifetime of the recipient." to each category.
- 2.6 General Memberships**—Revise family membership to account for a dependant turning 18 during the membership period giving the dependant three choices: to remain as a dependant without a voting privileges; notify the Board in writing of their wish to be classified as an adult with voting privileges; or notify the Board in writing of their wish to be

- removed from this membership category at which time they may opt to purchase a Single Membership.
- 2.7** **Conditions of Membership**—Insert “Members shall at all times conduct themselves in a professional manner and in accordance with the Code of Conduct as outlined in Appendix A.”
- 2.9** **Register of Members**—Revise “The Board shall keep an up to date Register of Members containing the names and pertinent information of Voting Members (Single Members, qualifying Family Members, and Life Members), and non-Voting Members (non-qualifying Family Members, Institutional Members, Honorary Members, Friends of the Society, and Affiliated Societies). Distribution of the Register of Members shall be limited only to Voting Members of the Society. The Society and its Members shall abide by any provincial regulations as laid out in the Alberta *Freedom of Information and Protection of Privacy Act* as amended, or any statute substituted for it.”
- 3.7** **Termination of Affiliation**—Subsections “b” and “c” revised for clarity.
- 5.7** **Nomination and Election of Officers and Directors**—Revised to change the process of the elections by making only one additional call for nominations, and to ratify the elections results at the Annual General Meeting.
- 5.9** **Term Commencement**—Revise “Term commencement of elected Officers and Directors shall be September 1 of the calendar year.”
- 5.10** **Vacancies**—Revised to read “Any vacancy occurring during the term shall be filled by the Board at a properly constituted Board Meeting. The successor shall serve the remainder of the term of the vacant position.”
- 5.12** **Removal**—Revised wording for clarity.
- 6.2** **Positions**—Revised to read “Under the provisions of Articles 5.7 and 5.8, the Society shall elect the following Officers: President, Vice-President, Secretary, and Treasurer; and the following Directors: Membership Director, Editor, Program Coordinator, Field Trip Coordinator, and Director at Large. The position of Past-President is automatically filled by the exiting President of the Board. Directorships other than the ones listed above may be added or removed from time to time in accordance with Articles 5.1 and 6.13 by an affirmative vote of three-quarters of the Society at any properly constituted Annual or Special General Meeting.
- 6.3** **Committees**—Has been deleted and renamed “Term”.
- 6.3** **Term**—Revised wording for clarity.
- 6.4** **President**—Add “The President shall approve all records of the Society.”
- 6.13** **Director at Large**—Add “Any additional Directorship created by the Society shall be called the Director at Large. The Director at Large shall perform all duties assigned to this office by the Board.”
- VII** **COMMITTEES**—The entire section has been added and is similar to **Section V, Board of Directors**.
- 7.1** **General**—Committees composed of a minimum of a Committee Chairperson and a maximum of any number of Members as determined by the Board, may be formed or dissolved by the Board at a properly constituted Board Meeting to fulfill such duties as the Board may assign from time to time.
- 7.2** **Duties**—Each Committee shall, subject to the Bylaws or direction given it by the Board, assume the general management of all affairs, policies, programs, and activities assigned by the Board. The Committee Chairperson shall provide reports as directed by the Board respecting the affairs, policies, programs, and activities of the Committee.
- 7.3** **Committee Meeting**—Meetings of the Committee shall be held as often as may be required, and shall be called by the Committee Chairperson. Meetings are open to Committee Members, the President of the Board, and any guest the Committee Chairperson invites. Only Committee Members may vote.
- 7.4** **Notice**—Notice of Committee Meetings shall be given to Committee Members and the President of the Board verbally, in writing or by electronic mail by the Committee Chairperson at least three days in advance. The Committee Chairperson shall notify Committee Members and the President of the Board of changes in meeting dates, time, or place verbally, in writing, or by electronic mail as soon as possible prior to the meeting.
- 7.5** **Quorum**—A Majority of all Committee Members shall constitute a quorum to transact business unless the Committee comprises the Committee Chairperson in which case the Chairperson shall transact business.
- 7.6** **Voting**—Each Committee Member has one vote. If there is a tie, the motion is defeated.
- 7.7** **Selection of Committee Members**—The Committee Chairperson may select Members to serve on the Committee with the advice and consent of the Board.
- 7.8** **Eligibility**—No Member shall be eligible to serve on a Committee unless they have been a Member in good standing for at least one year, or by an affirmative vote of the Board at a properly Constituted Board Meeting.

- 7.9** **Term**—The term of a Committee may be limited or unlimited as determined by the Board at a properly Constituted Board Meeting.
- 7.10** **Vacancies**—The Committee Chairperson may select Members to fill vacancies on the Committee with the advice and consent of the Board.
- 7.11** **Conflict of Interest**—Where a Committee Member, either on their behalf or while acting for, by, with, or through another, has any financial or personal interest, direct or indirect, in any matter, or otherwise has a conflict of interest, they:
- a) Shall disclose their interest fully at a properly constituted Committee meeting; and,
 - b) Shall disclose their interest and the general nature thereof prior to any consideration of the matter being discussed; and,
 - c) Shall not take part in the discussion of or vote on any question in respect of the matter; and,
 - d) Shall not in any way whether before, after, or during the Committee meeting influence the voting on any such question.
- The financial or personal interest, direct or indirect, of an immediate family member (parent, spouse, son, daughter, brother, or sister) shall, if known to the Committee Member, also be deemed to be the financial or personal interest of the Committee Member.
- 7.12** **Removal**—Any Member serving on a Committee may be removed from service by:
- a) The Society at any properly constituted Annual or Special General Meeting for any reasonable Cause upon a three-quarters vote of the Voting Members present; or,
 - b) The affirmative vote of all Members of the Board present at a properly Constituted Board Meeting for any reasonable Cause. In this instance, the Member in question has the right to appeal the decision made by the Board at the next properly Constituted General Meeting at which time they may be re-instated by a vote of three-quarters of the Voting Members present; or,
 - c) The affirmative vote of all Committee Members present at a properly Constituted Committee meeting for any reasonable Cause. In this instance, the Member in question has the right to appeal the decision made by the Committee at the next properly Constituted Board Meeting at which time they may be re-instated by a vote of three-quarters of the Voting Members present.
- 7.13** **Resignation**—Any Committee Member wishing to resign their position may do so upon notice in writing to the Committee Chairperson. A Committee

Chairperson wishing to resign their position may do so upon notice in writing to the Board. The resignation takes effect immediately.

- 8.10** **Cause**—Add “There are several instances which shall constitute proper Cause for disciplinary action; these shall include but not necessarily be limited to:
- a) Dishonesty (the use of lies or deceit, or the tendency to be deceitful); or,
 - b) Excessive tardiness (being late for meetings where attendance is mandatory beyond what is considered acceptable, proper, usual, or necessary); or,
 - c) Excessive absence without reason (being absent at meetings without reason where attendance is mandatory beyond what is considered acceptable, proper, usual, or necessary); or,
 - d) Fraud (deliberate deception); or,
 - e) Gross negligence (very obvious or unmitigated acts of causing injury or harm to another person and/or property as a result of doing something or failing to provide a proper or reasonable level of care); or,
 - f) Illegal activity (taking part in or doing something that is against the law); or,
 - g) Incompetence (lacking the skills, qualities, or ability to do something properly); or,
 - h) Insubordination (being disobedient or rebellious by refusing to obey orders or submit to authority); or,
 - i) Wilful contravention (deliberately breaking rules or laws, or deliberately opposing a formal statement or decision); or,
 - j) Wilful damage to property (deliberate physical harm or injury making something less useful, valuable, or able to function); or,
 - k) Human Rights violations (the rights considered by most societies to belong automatically to everyone, for example, the rights to freedom, justice, and equality).”

Appendices—Add entire document as described below.

Appendix A: Code of Conduct

Policy

All Members shall at all times conduct themselves in a professional manner and in accordance with the Society Code of Conduct as outlined below.

Purpose

This policy has been created to ensure all Members adhere to common standards of personal conduct and commit to clear performance expectations in carrying out the business of the Society.

Application

This policy applies to all Members of the Society, its Officers, Directors, and all Members of standing or indepen-

dent Committees. The Chairperson of the Board shall ensure all Officers, Directors, and Committee Chairpersons are aware of their responsibilities as defined in the Code of Conduct. Repeated and/or incorrigible Breach of the Code of Conduct may be Cause for:

1. Membership termination as permitted in Article 2.3 of the Bylaws; or
2. Removal of a Member from service on a Committee as permitted in Article 7.12 of the Bylaws; or
3. A recommendation to the General Membership for removal of a Member from Office as permitted in Article 5.12 of the Bylaws.

Responsibility

Board Chairperson

1. Ensures the Code of Conduct is reviewed annually at the first meeting of the Board, or as soon as practical after the election of the Board, or as soon as practical after the appointment of any Member to the Board.
2. Advise Board Members if their conduct appears to be in breach of the Code of Conduct, and if necessary, assists Board Members to achieve compliance.
3. Advises the General Membership if any Board Member is repeatedly and/or incorrigibly in breach of the Code of Conduct.
4. Assists Committee Chairpersons to ensure Committee Members comply with the Code of Conduct.

Committee Chairperson

1. Ensure the Code of Conduct is reviewed at the first meeting of any newly formed Committee, or as soon as practical after the appointment of any new Member to the Committee.
2. Advise Committee Members if their conduct appears to be in breach of the Code of Conduct, and if necessary, assist Committee Members to achieve compliance.
3. Advise the Chairperson of the Board of Directors if any Committee Member is repeatedly and/or incorrigibly in breach of the Code of Conduct.

Member

1. Ensure the Code of Conduct is reviewed as soon as practical after acceptance as a Member into the Society.
2. Advise the Chairperson of the Board of Directors if any Member is repeatedly and/or incorrigibly in breach of the Code of Conduct.

Code of Conduct—Members

Members shall at all times be governed by the Bylaws and policies adopted by the Society for the governance and management of its affairs. Members shall ensure none of their actions or decisions conflict with the Code of Ethics as indicated in the Alberta Palaeontological Society Infor-

mation Handbook for Members.

GENERAL STANDARDS OF PERSONAL CONDUCT FOR MEMBERS

Members shall:

1. Respect the rights, dignity, and worth of all other persons;
2. Conduct themselves openly, professionally, lawfully, and in good faith in the best interests of the Society;
3. Behave with appropriate decorum;
4. Be fair, equitable, considerate, and honest in all dealings with others;
5. Respect the confidentiality appropriate to issues of a sensitive nature;
6. Respect the decisions of the majority and resign if unable to do so;
7. Commit the time to attend business meetings and to be diligent in their preparation for and participation in discussions.

Code of Conduct—Board of Directors and Committees

Board and Committee Members shall at all times be governed by the Bylaws and policies adopted by the Society for the governance and management of its affairs. Members of the Board and of Committees shall ensure none of their actions or decisions conflict with the Code of Ethics as indicated in the Alberta Palaeontological Society Information Handbook for Members.

GENERAL STANDARDS OF PERSONAL CONDUCT FOR BOARD AND COMMITTEE MEMBERS

In addition to observing the Code of Conduct as defined for Members, Members of the Board and Committees shall:

1. Regardless of how they become a Board or Committee Member, be responsible first and foremost to the welfare of the Society and must function primarily as a Member of the Board, not as a Member of any particular constituency;
2. Exercise due diligence in upholding their fiduciary responsibility to the Society;
3. Ensure all Members are given sufficient opportunity to express opinions, and all opinions are given due consideration and weight.

GENERAL DUTIES AND RESPONSIBILITIES OF THE BOARD OF DIRECTORS

The Board of Directors shall:

1. Establish the strategic purpose and values of the Society.
2. Exercise financial oversight and fiduciary responsibility for the Society on behalf of its Members.
3. Exercise risk management oversight on behalf of the Society.

4. Establish formal and informal reporting requirements between the Board and any:
 - Committees;
 - Chairperson of the Board;
 - Operational or management Committees (through the Chairperson of the Board);
 - Government Bodies.
5. Establish, approve, and review policies, particularly those related to governance of the Society or its Members.
6. Avoid real or perceived conflicts of interest. Where a potential conflict of interest exists, a Member of the Board is expected to declare the conflict and act in accordance with established policies for resolution or avoidance of the conflict.
7. Ensure “best practices” in Board procedures.
8. Respect the authority of the Chairperson, and exercise only such authority as is granted individually or collectively by Board governance policies.
9. Ensure only the Chairperson of the Board speaks publicly on behalf of the Society unless another spokesperson has been specifically authorized by the Board.

GENERAL DUTIES AND RESPONSIBILITIES OF COMMITTEE MEMBERS

Committee Members and persons serving on operational or other Committees of the Society shall:

1. Review and be guided by the terms for the Committee as established by the Board.
2. Develop, in conjunction with the Board an annual program of work for the Committee, including performance outcomes and timelines.
3. Respect the authority of the Chairperson of the Committee, and communicate to the Board through the Chairperson or through such lines of communication as may be established by the Board.
4. Avoid and declare potential conflicts of interest, according to Board policies and procedures.
5. Prepare for and participate fully in all discussions and decisions of the Committee.
6. Ensure decisions that create budgetary implications or expose the Society to potential risk are flagged for specific attention by the Board.
7. Ensure budgetary constraints are known and respected. □

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Upcoming Talks

April

Dr. Tanya Samman

Mount Royal College

Geoscience and Mythology

Friday, April 18, 7:30 P.M.

Mount Royal College, Room B108

On the surface, geoscience and mythology appear to be mutually exclusive and fundamentally incompatible. Science, after all, only deals with natural phenomena, whereas mythology usually invokes the supernatural.

Geoscience is a rigorous multi- and interdisciplinary approach to sorting out the history of the Earth. But evidence of that history can also be found in mythology—in the deep-seated memories of events and geological oddities recorded in stories and art. Geomythology is a nascent field of scientific enquiry. Clearly, many myths and legends are just stories, but it should not be overlooked that some aspects of mythology are also rooted in truth. Recent and ongoing work by several researchers demonstrates that, far from being mutually exclusive, geoscience and mythology can each inform the other.

Biography:

Dr. Samman has always had an interest in mythology. She received an Hon. B.Sc. from the University of Toronto in 1997, specializing in palaeontology and geology.

It is a little known fact that, in addition to biology/zooiology and geology courses, she also took several courses in the area of Classics (including mythology) during her undergraduate training. Her research interests include palaeoecology and functional morphology. She is interested in organisms on both a micro- and macroscopic scale (from diatoms and palynomorphs to dinosaurs). Her view is that the functional aspects of organisms cannot be examined without some knowledge of the environments in which they live.

She received her M.Sc. from the University of Toronto in 2000, and completed the requirements for her Ph.D. at the University of Calgary in 2006. Dr.

Samman is interested not only in the research aspect of science, but also in science education and outreach. She is currently teaching introductory geology courses at Mount Royal College.

meant acute memory and problem solving, play and perhaps even consciousness. This talk discussed how far the coleoids have taken the basic molluscan design to produce an advanced intelligence unique in the invertebrates.

May

Dave Watt

Rocky Mountain Adventure Medicine

Wilderness Safety and First Aid

Friday, May 9, 7:30 p.m.

Mount Royal College, Room B108

The last session of the year before field season will focus on wilderness safety and first aid. The focus will be on the likely types of situations we may find ourselves in during field trips.

Biography:

Dave Watt is the director of Rocky Mountain Adventure Medicine, safety consultants that specialize in remote work sites and extreme environments. □

Biography:

Dr. Mather was born and raised in Victoria, B.C., which partly fueled her interest in sea animals. She received a B.A. in Biology from the University of British Columbia in 1964, a M.Sc. in Biology from Florida State University in 1972 and a Ph.D. in Psychology from Brandeis University in Boston in 1978. She is now a Professor in the Department of Psychology at the University of Lethbridge.

She strongly believes in mentoring and community services and has been very active in both those areas. Working with cephalopods over the years, she has studied the ways they communicate and play, which are important areas studied by psychologists who are trying to understand human communication and language. □

Program summary

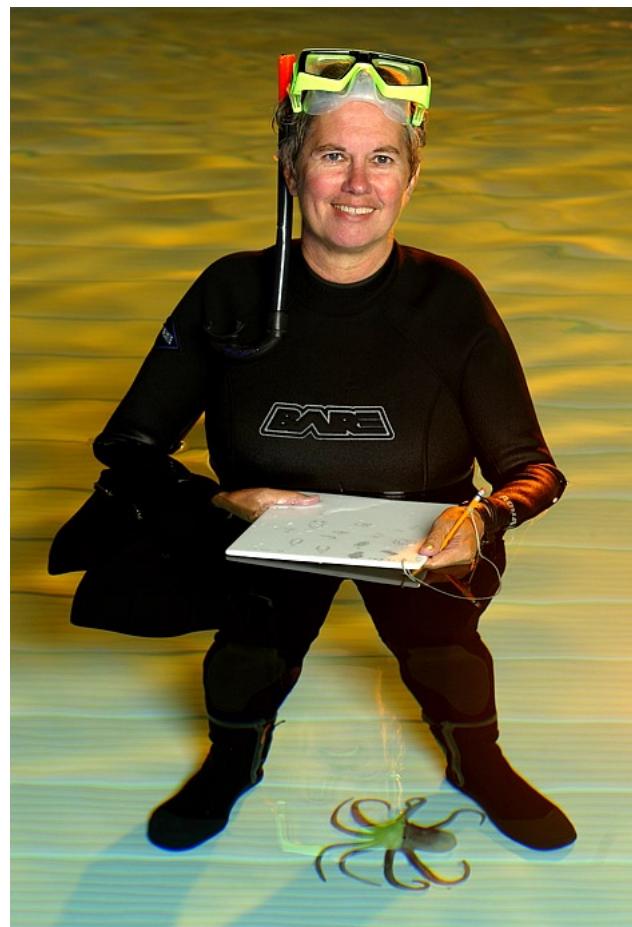
Friday, February 15, 2008, 7:30 p.m.

The coleoid group: Fresh new branches from old cephalopod limbs

Speaker: Dr. Jennifer Mather, Department of Psychology, University of Lethbridge

While the Cephalopod mollusks were dominant in the seas during the late Palaeozoic and Mesozoic eras, the line almost died out in subsequent times. However, the coleoids appeared, probably in the Jurassic, and flourished with quite a different body form likely due to the competition with bony fishes. They have lost the external shell in most cases and have evolved an active predatory lifestyle. Octopuses, squid and cuttlefish have a closed circulatory system, a flexible mantle, excellent sensory systems and an unmatched skin colour/texture system.

The combination of good sensory acuity, muscular manipulative arms and a large central brain has set the stage for complex behaviour and intelligence in this group. For octopuses in particular, this has



Professor Mather at work with one of her subjects. Photo courtesy of Dr. Mather.

Remember Me:

Harold D.R. Lowe (1886–1952)
A forgotten name in early Albertan
vertebrate palaeontology history

By Darren H. Tanke [†]



World history is replete with famous men and women. The early history of dinosaur collecting in Alberta, Canada is no different, with the likes of Barnum Brown and the Sternberg family immediately coming to mind.

Throughout history, the greatness of these people was often borne upon the backs of others. Within Albertan palaeontological field crews these were often men of lesser education or experience, but nevertheless were men who sometimes did more than their fair share of the hard work, found good fossils while toiling under the hot sun, enduring biting insects, loneliness, fatigue and privation. These men are sometimes mentioned in field notes or diaries, but are rarely acknowledged fully and are therefore usually lost to history relatively quickly.

One of these men was Harold D'acre (pronounced “day-ker”) Robinson Lowe. He was at first a C.M. Sternberg field assistant, but quickly went on to become Sternberg’s “right hand man,” the two working together off and on for over a decade (not 14 seasons as reported in Anonymous, 1940), visiting three major field areas in Alberta and also doing smaller scale work in Saskatchewan and Manitoba. With the

exception of the Sternbergs, Lowe had as many or more field seasons of early Albertan dinosaur collecting work than any others. He is briefly mentioned in several published histories of Albertan vertebrate palaeontology (Russell, 1966, p. 26; Dodson, 1996, p. 160; Spalding, 1999, p. 89; Tanke, 2007). To cap it all, Lowe even had an Albertan dinosaur (the ceratopsian *Monoclonius lowei*) named for him.

Even with this honour it is likely that few if any in today's vertebrate palaeontology community have any idea who Harold D.R. Lowe was and the important contributions he made to the field. An earlier note (Tanke, 2007) addressed Harold's contributions to Albertan ceratopsian palaeontology, but this is a greatly expanded historical discussion. Here is Harold's and the Lowe family's story.

Some of the specimens Harold found or helped collect are figured, as well as some of the quarries he worked in.

This being an historical document, old taxonomic names are used, but are corrected as required. Institutional abbreviations are as follows: AMNH (American Museum of Natural History, New York); CMN (Canadian Museum of Nature, Ottawa); DPP (Dinosaur Provincial Park, Alberta); FMNH (Field Museum of Natural History, Chicago); TMP (Royal Tyrrell Museum of Palaeontology, Drumheller, Alberta). The catalogue numbers for some CMN specimens were either unknown, or have not been assigned at present

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due to their unprepared status. In those cases, only the field number is given.

The early years

The Lowe family originally hailed from St. Helens, Lancashire, 17 km ENE of Liverpool, England. The 1891 census lists the family residing at 114 Robins Lane, Sutton, St. Helens. Matthew Booth Lowe, the father, was 32 and a proprietor and farmer, his wife Sarah Ann (née Robinson, born Nov. 7, 1861), 29. They were married at St. Paul's Church in Liverpool on November 7, 1881 (Anonymous, 1931g). Three sons are listed in the 1891 census: Matthew (also spelled Mathew in some documents) B. Lowe, age 8, born in Rainhill (near Liverpool); Thomas E. Lowe, age 6, born in St. Helen's and Harold D.R. Lowe—the main subject of this story—age 5, born Feb. 1, 1886 in Liverpool.

The 1901 census (Anonymous, 2007) shows the family living at 260 Boundary Road in St. Helen's, the father now a cattle dealer; Matthew, 18, a provision dealer; Thomas, 16, a carter¹; and Harold, 15, also a carter. The young age at which the Lowe sons were working, typical for the times, suggests that they got a basic education and then became part of the work force. A fourth son, James Anthony Robinson Lowe, age 9, born Aug. 5, 1891² in St. Helen's, completed the family.

Moving to Canada

There is some uncertainty as to the details of the Lowe family first coming to Canada. The father (and family?) first immigrated to Canada in 1905 and presumably left England from the nearby port of Liverpool. They resided in or near Toronto for several years, but what kind of work they engaged in there is presently unknown. Harold's 1909 application for an Albertan homestead³ lists his previous residence as Ontario and his occupation as "farmer," so it is possible that the family all farmed in Ontario.

Around 1908 the family answered the call of the west and decided to move to Alberta, no doubt lured there by the promise of cheap land for foreign settlers. A 160-acre quarter-section of land was selling for an average of only \$10.00. They arrived in the Big Stone district⁴, almost 40 km south of Youngstown, Alberta⁵ early in 1909. They were among the very first settlers to that part of Alberta (Figure 1).

As the family was settled in the region at an early date and well established before other settlers arrived, the Lowe homestead was frequently visited and used as a stopover point for travelling families and

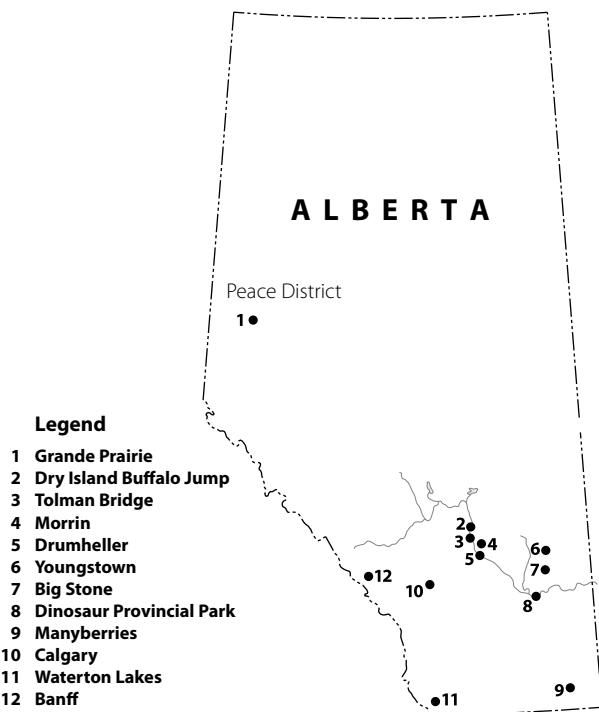


Figure 1. Map of Alberta, Canada showing the Red Deer River, its major tributaries and places mentioned in the text. Map outline from Natural Resources Canada.

their livestock on the way to their own new homesteads (Paetz and Paetz, 1984, p. 560; Anonymous, 1990). This was standard practice among the early pioneers. In a strange and often unforgiving land, with little in the way of roads, communication, or medical and police infrastructure, people depended on and looked out for one another.

At the beginning of their new life in Alberta, the Lowe family lived under rather crude conditions in a canvas tent, with their animals sheltered in a long livestock shed made of stacked rectangular pieces of prairie sod (Figure 2).

With the onset of spring, the tent was soon replaced by a 8.5 x 8.5 m (28 ft) large, two-story house, quite roomy and luxurious for the times (Figure 3).

Harold applied for his own Albertan homestead on August 14, 1909³. According to Paetz (1988, p. 547),

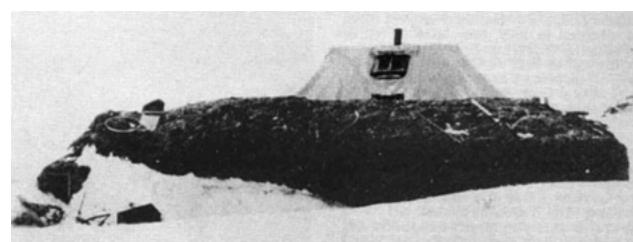


Figure 2. The Lowes' primitive canvas home living quarters and sod animal barn, winter of 1909–1910. From Paetz, 1984.



Figure 3. Harold Lowe in his new Ford Model T at his parents' home. From Paetz, 1984.

he farmed in the east half of Section 10, Township 26, Range 9, w4M; his parents farmed s½, Section 3, Township 26, Range 9, w4M; and his brother Jim on w½, Section 3, Township 26, Range 9, w4M, both to the south (Figure 4a-b).⁶

While the family had farming experience, like many early Albertan pioneers, the Lowes got off to a bad start, plagued by misfortunes beyond their control. In the fall of 1909 a huge grass fire destroyed thousands of acres of prime rangeland. This fire destroyed entire farms and ranches and took the

life of one man and severely injured his daughter. Worse yet, all the native fodder and that grown and harvested by many farmers in the region went up in flames. The Lowes also lost their animals' winter feed and the animals suffered accordingly. Quick (1962, p. 12) notes:

"The only people we contact north of the Red Deer River were the Lowe family, who had settled the fall before in the township north. They had spent the winter in a tent with the walls banked around with sod. It was a terrible experience for them. When we visited their place that spring they had their remaining few horses slung up to the roof poles of their long dugout and sod barn in an attempt to keep them on their feet and alive. They were so weak they could not stand. A prairie fire had burned off practically the whole country in the fall and they had little feed except for some slough grass that wasn't worth much."

This bad situation worsened when 1910 proved to be one of the hottest on record. Green sprouts came up in the spring, promising feed for hungry animals, but no real rain fell until August so crops and native grass production was again small and withered or of poor quality.

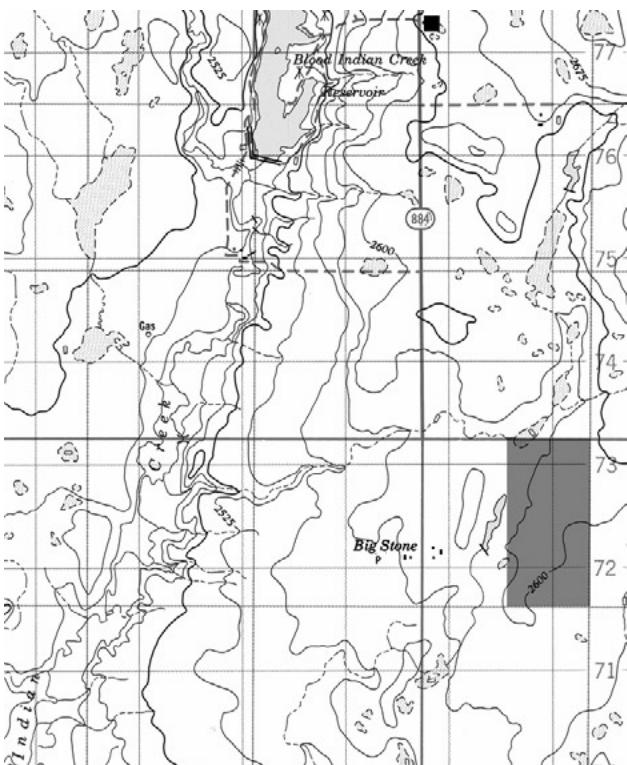


Figure 4a-b. a) Topographic map (NTS 1:50,000 Big Stone 72M03) detail of the Blood Indian Creek and Big Stone, Alberta district showing the land owned and farmed by Harold Lowe (shaded rectangle). The new location for Big Stone is indicated by the black square. b) Some of Harold Lowe's former property seen August 25, 2007, looking NNW; photograph taken at 12U 0488294, 5671154 (WGS 84). Some of these large glacial erratics dumped in the foreground along the field's edge are now deeply buried; did Harold move them there many years ago while clearing his land?

In 1911, disaster struck again when another prairie wildfire destroyed Harold's farm and all his possessions. The family again lived in a tent, this time for three years while farming and until a new home could be built (Anonymous, 1952a).

1912–1914

The ArchiviaNet (2007) website records that Matthew B. Low [sic] ran the Big Stone Post Office⁷ from June 6, 1912 to October 26, 1914. Whether this was the son or the father is unknown. Whoever it was eventually resigned from the position.

Associated affidavits³ supporting Harold's application for homestead ownership and dated April 29, 1913 state that at this point Harold was a bachelor, had 30 acres of land broken for planting, had harvested 26 acres the year before, had a wood house measuring 10 ft x 12 ft—worth \$100.00—owned one horse and had fenced 1.75 miles of his homestead.

The "Local Happenings" section and advertisements in the Youngstown, Alberta newspaper *The Plaindealer* provide glimpses into the Lowe family

and their activities. The earliest reference to the family is on August 6, 1914. Evidently the Lowe brothers combined their resources and formed their own company called "Lowe Bros.", based in Youngstown.

Newspaper accounts in the summer of 1914 report that the Village

of Youngstown council were passing resolutions to pay off outstanding accounts, including those of the Lowe Brothers, but the work they did for the town is unstated. A September 24, 1914 advertisement in the same paper announces that the Lowe Brothers now have a chopping (threshing) mill (Figure 5). In mid-September T. (Thomas) Lowe of Calgary was visiting M. Lowe of Youngstown and his parents in Big Stone, indicating that Thomas had moved away. Where the Lowes lived in Youngstown is uncertain; the "Local Happenings" section for September 13, 1923 speaks of the Lowe house in past tense as being on 4th Avenue.

1915

An early 1915 newspaper advertisement in *The*

We have accepted the agency for the Drumheller Coal Company Ltd., of Drumheller and will have on hand at all times a full supply of the famous

DRUMHELLER COAL

Net Coal \$4.25	Mine Run \$5.00	Bit Coal \$5.75
-----------------	-----------------	-----------------

These prices are delivered in Youngstown.
At car prices 25c per ton less.

This coal is second to none and is guaranteed to give satisfaction.

TRY A TON

Lowe Bros. - Agents
YOUNGSTOWN, ALTA.

Figure 6. January 21, 1915 *The Plaindealer* newspaper advertisement showing the Lowe brothers as agents for sale of Drumheller coal.

Plaindealer shows the Lowe Brothers as agents for Drumheller coal (Figure 6).

Photos of Harold from this time (Figures 7a-b) show him tall, thin, bespectacled, and square-jawed.

1916

Advertisements (Figure 8) in *The Plaindealer* newspaper this year show the Lowe Brothers expanding their business, still selling coal, but now also hauling sand and gravel, excavating cellars, selling cream separators and horses, and hiring out horses for work.

1915 had been a bumper crop year across Alberta and many farmers made money. At this point many Albertan farmers could afford that new luxury sweeping the country—a car. On January 6, 1916, the Lowe Brothers got a Model T Ford car, likely their first. The "Local Happenings" section of the newspaper states, "Lowe Bros. now honk-honk about town in their new car" (see Figure 3). The February 6, 1916 issue of *The Plaindealer* includes an advertisement that shows the Lowe parents were trying to rent out their property to any would-be farmer. An auction sale on March 23 sold off their farming implements, indicating the parents had given up on farming. Son Thomas moved back to Youngstown in the third week of March. A late July issue of the paper reveals that Mrs. Lowe ran a boarding house in town.

Youngest son James answered the call to arms on May 8, 1916 (Library and Archives Canada, 2007) and survived that conflict (Anonymous, 1919c; 1984). Of the 167 Youngstown and area men who served, 31



Figure 5. Lowe Brothers advertisement from October 8, 1914 issue of *The Plaindealer*.

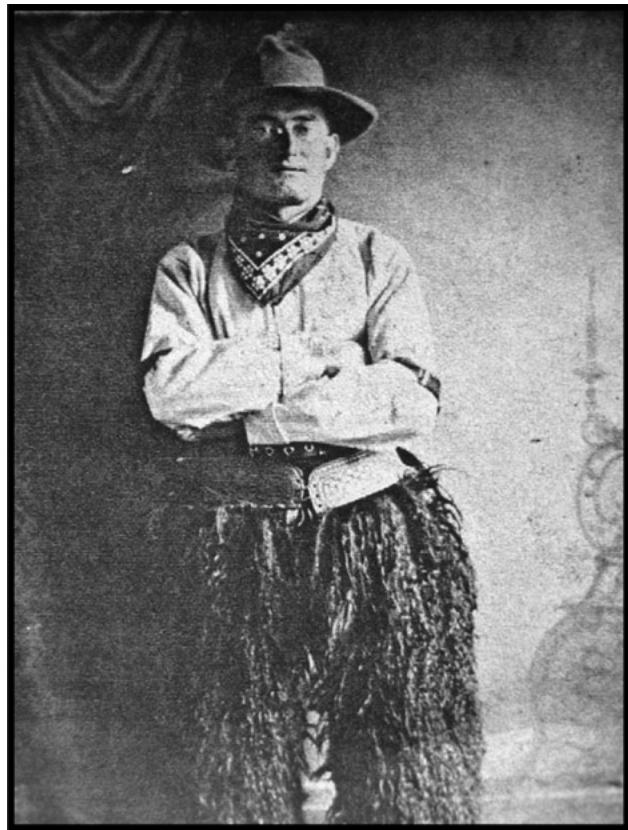


Figure 7a-b. a) Harold D.R. Lowe in 1915, age 30. Image courtesy of Ann and Nancy Simonetta. b) Another studio portrait photograph of Harold. One wonders if the cowboy theme consisted of his own clothes or was a photo-studio supplied "cowboy" costume donned for the benefit of relatives overseas. The image is undated, but is believed to show him during his early years in the Youngstown, AB district, c. 1915. Photograph courtesy of Don Lowe.

(a high 18.5%) did not survive, being killed in battle, dying in accidents or POW camps or perishing later in Canada from their injuries⁸. James served with the RCASC (Royal Canadian Army Service Corp) with the rank of private. He was the only Lowe son to serve in the military. The others were likely exempted given their farmer status and in Harold's case, other critical work he did supporting the military cause (see below).

1917

According to Paetz (1984), the Lowe family moved to Youngstown this year and stayed there for several years, though local newspapers suggest that they had moved into town earlier than that. Farming had proved problematic for them. As many immigrant farmers to southern Alberta found out the hard way, during drought conditions, the soil was dry like flour and blew

away in the relentless prairie wind. Though grain prices were good, rainfall was unpredictable, often resulting in stunted crops or poor yields. Hail storms, disease, frost, or grasshoppers destroyed good crops.

Lowe Bros.

Contracting

Excavators

Get our prices on your cellar
work, etc.

Sand and gravel orders taken.
Horses for sale

Coal at all times.

Youngstown Phone 36 Alta.

Figure 8. Lowe Brothers newspaper advertisement from *The Plaindealer* newspaper April 27, 1916.

In the spring of 1917 Harold formed his own company doing hauling and garden tilling for local farmers (Figure 9). Also around this time, he broke and trained horses for the Canadian military overseas (D. Lowe, pers. comm., 2007). Such horses were utilized for a variety of functions, such as officer mounts; hauling ammunition wagons and artillery pieces, etc. The horses were sent by rail east to Montreal and then shipped overseas for duty in France (see Bligh, 1922 for an interesting account of life aboard a WWI horse transport). The SS *Mount Temple*, sunk in December, 1916 with

unprepared Albertan dinosaurs aboard (Tanke *et al.*, 2002) also carried horses destined for war service in France. Her Canadian port was Montreal. Quite possibly some of the horses Harold worked with were aboard that doomed ship.



Figure 9. Harold Lowe advertising his draying and farming services. From *The Plaindealer*, May 17, 1917, p. 8.

1919

This year was a time of change for Harold and other members of the Lowe family. Anonymous (1919d) notes James planning a trip to the Peace Country in northwest Alberta, to look at "prospects" there, indicating that he or possibly the entire family were thinking about moving elsewhere. This was a common occurrence at the time. Local history books from southern Alberta speak of dry-belt farm families moving up to the Peace River and Grande Prairie regions where good soil, usually reliable rains and long summer evenings produced excellent crops.

Living with the Lowes in Youngstown at this time



Figure 10. Harold Lowe advertisement for his taxi service. From *The Plaindealer*, November 6, 1919.

was a woman identified in the "Local Happenings" column simply as "Miss Robinson." She was the elder Mrs. Lowe's sister from England. The eldest son Matthew was in Banff, Alberta, for part of the summer, where he and an unidentified brother (likely Thomas) were involved in sack racing at a Sports Day event there (Anonymous, 1919b).

In mid-July Harold added a taxi service to his company. Anonymous (1919e) states that in mid-October, Harold sold his dray line business to A.H. Alward⁹ and that Harold intended to use his Dodge car for livery (taxi) work. An advertisement for this service was placed in a couple subsequent issues of the local paper (Figure 10), then the ads stopped appearing. The November 20 issue of *The Plaindealer* announced that Harold had left Youngstown for Drumheller on the 17th, where he was going to assist his brother Matthew (Anonymous, 1919f) who was then engaged in converting a former implement building into a rooming house (Anonymous, 1919g). Thus ended Harold's days of residing in Youngstown.

Drumheller Days

It was hoped that much of the early 1920s Lowe family history would be learned from Drumheller newspapers on microfilm, but most issues of the *Drumheller Mail* for 1920–1924 and *Drumheller Review*, 1921–1927, were never microfilmed because original copies were apparently never saved. Details of Harold, his family, and their activities are therefore sketchy during this time period.

The early 1920s

By 1919, Drumheller (Figure 11) was a booming coal town¹⁰, with a 1922 population of 3,000 (12,000 residing in the surrounding valley) with thirty coal mines and 1.4 million tons of coal (largely dug and loaded by hand) shipped in 1921 (Wrigley's, 1922).

Incorporated as a village in 1913 with but a handful of people, the arrival of the Canadian National Railroad to Drumheller the year before promised a great future for investors and speculators. Underground coal mines were built in rapid procession and millions of tons of domestic-grade Late Cretaceous coal were soon being shipped across western Canada for domestic and industrial use. January 1920 shipments averaged 6,000 tons per day (Anonymous, 1920b) with some days exceeding 7,000 tons (Anonymous, 1920d).

These were tumultuous times in Drumheller. On the heels of the Russian Revolution, communist political groups and unions attempted to unionize coal



Figure 11. Drumheller Alberta, looking roughly north, as it appeared a few years before the arrival of the Lowe family. The main intersection shown here is today's Centre Street (with Vickers Bros. sign) and Railway Avenue. Though undated, various lines of historical evidence suggest the picture was taken around 1914–1916. An interesting bloopoer on the railway station sign identifies Drumheller as "Drumeller." Copied from a framed picture in the Travelodge Hotel, Drumheller.

mine workers across North America (Anonymous, 1920a-b, d-e; Digby, 2007b) resulting in strikes and numerous labour and logistical problems.

Free enterprise was everywhere, with ample opportunities for ambitious young men. The Lowe Brothers no doubt heard of this activity and were attracted to the town. In 1920 they opened a garage and ran a taxi and bus service in Drumheller. A small and unsourced newspaper clipping briefly states that the company was started in January 1920 and operated between the Regent Theatre, Fernet Store, Newcastle Store and Monarch Mine. The bus line also acted as a courier, delivering small packages in town and locally along the bus route. Whenever the passenger train arrived, the buses and taxis waited at the station for clientele (Smith, pers comm., 2007). Eldest son Matt was also in the bus industry, but in Banff for the summer, where he ran the company (Anonymous, 1938i).

Around this time, Harold married Daisy Maude Woodford (Figure 12), though details of how they met and their union are presently unknown¹¹. She was born on March 2, 1889 in Key Haven, Hampshire, England. Her father, George Woodford, was a bricklayer. She came from a large family with at least



Figure 12. Harold's wife Daisy Maude as a young woman, in an undated image. Courtesy of Don Lowe.

four sisters and several brothers.

Harold was her second husband. In June 1907 she had married Henry James Hoad of Lymington, Hampshire (Free BMD Home Page, 2007). They had two sons and a daughter: Leonard and Stan (who died at age 26), and Freda Vinson. Mr. Hoad then passed away.

It is believed that Harold and Daisy were married in England and he brought her back to Drumheller in 1920, though confirmation of this is presently lacking. As children, Harold and Daisy grew up in England over 300 km apart so how they met is uncertain; Harold's son Don could provide no explanation. Evidently the Hoad children remained in England.

The 1922 *Wrigley's Alberta Directory* (p. 280) identifies Harold as a driver for Valley Bus & Taxi Co. Ltd. (Figure 13), with his brother James acting as secretary, treasurer and manager for the same company. The same document (p. 284) identifies a Louis Goldberg as the company's president. Mackay (1929) records that the first company buses were a Dodge and an International and that they had routes in Drumheller and a short distance west to the towns of Newcastle and Nacmine. *Wrigley's* identifies all employed people in Drumheller at the time, and none are listed as working for the Lowes' firm, suggesting that it was a family business that employed family members only.

Drumheller in the early 1920s was a rough and rowdy town: period newspapers attest to frequent fights, armed robberies, transients and illegal drug use problems. Prostitution was also an issue (Gray, 1973; Hlady, 1988c; Digby, 2007c) and the Ku Klux Klan would eventually establish themselves in town though their movement would not grow there and was eventually disbanded.

The Lowe brothers really disliked working their taxi service on weekends as drunk and brawling miners were often their late night customers and some



Figure 13. Early 1920s Drumheller picture found hanging in a Drumheller restaurant, showing the Lowe Brothers' bus and taxi company. Harold Lowe stands next to his mother and father (seated). The rest of the group are possibly some of his brothers, though none are identified. The dog is probably "Bo," a neighborhood mutt Mrs. Lowe was fond of. The bus destination is NACMINE, a town just west of Drumheller with an active coal mine bearing the same name (North American Collieries Mine). The Provincial Archives of Alberta (Edmonton) have a similar image on file (catalogue #A15052), but their copy was taken from a broken glass plate negative where the right and top third of the image is missing; this broken image appears in Hlady, 1988d, p. 975 and Kolafa (2007), where none of the people are identified.

did not want to pay their fares. Arguments ensued and some disgruntled miners would punch in the taxi's celluloid side windows and mother Lowe would sometimes have to spend the greater part of a Sunday sewing the windows back into place.

1923

The "Local Happenings" section of *The Plaindealer* for April 5, 1923 states that Harold left Drumheller for Waterton Lakes, Alberta, where he was to spend the summer months, with his wife to follow soon after. What he was doing there is unstated; presumably he was engaged in some seasonal work.

Harold and Daisy's first child was born this year, a girl—Consuelo (Connie)—in Youngstown, on October 16. Harold and Daisy resided in Drumheller at this time so why the birth occurred in Youngstown was at first uncertain, but the *The Plaindealer* for September 13, 1923 revealed that while Harold no longer lived in the Big Stone district, he was still actively farming his land there¹². During harvest, Daisy must have headed north to Youngstown to have the baby before the couple returned to Drumheller in mid to late November.

Harold's British aunt, "Miss Robinson," is re-

ported (*The Plaindealer*, Nov. 22, 1923) as visiting the Youngstown area late in 1923 and thinking about staying the winter.

The Lowes sold their Drumheller bus and taxi service this year. Mackay (1929) records that William H. Rounds bought out both taxi and bus companies¹³ in Drumheller this year. It seems business was not good for either company, as Mackay writes: “...the two companies were discouraged by conditions, in fact, their ventures had proven practically failures.”

1924

The 1924 *Henderson's Alberta Gazetteer and Directory* (p. 243) again identifies Harold as a driver for Valley Bus & Taxi Co. Ltd., with his brother James acting as secretary/treasurer/manager for the same company. The company had been sold by this time, so the printing must be an inadvertent continuation from the previous issue.

Russell (1966, p. 26) records Harold working for C.M. Sternberg this summer but this is an error and should read 1925. Harold’s work activities in 1924 are unknown.

Field work for Harold—1925

The first mention of Harold in any palaeontological document is in C.M. Sternberg’s 1925 Geological Survey of Canada (GSC) field notes.

That summer, Sternberg (1885–1981) had two field camps, the first downstream from today’s Tolman Bridge, near Morrin, Alberta, before moving camp closer to new exposures upriver from the bridge. Both camps were located on the east side of the Red Deer River.

Early in the field season, the teamster, a Calgary man simply identified in Sternberg’s fieldnotes as “Bouge” quit suddenly, leaving Sternberg in a bind. However, Bouge¹⁴ recommended Harold Lowe as a replacement. It was a good suggestion. Sternberg went to Drumheller looking for another man he had in mind but could not locate him, so he wrote Lowe a letter enquiring if he would like a summer job. Harold began working for Sternberg a couple days later, arriving in camp on June 17.

Lowe, as it turns out, was a perfect field man for the times. Though thin, he was wiry and strong. From the farm, he was familiar with horses and their care.

The loading and hauling of heavy wagon loads posed no problem for him due to the experience from his draying business in Youngstown. His activity with his brothers’ company in Youngstown made him familiar with digging and mining tools and excavation techniques. Having had an automobile garage with his brother in Drumheller meant he was mechanically inclined and good at fixing things. Finally, at 39, he was close in age to Sternberg, more experienced and mature than Sternberg’s trusty 20-year-old assistant James E. Thurston¹⁵.

Sternberg immediately put Lowe to work prospecting for fossils, uncovering and collecting same, repairing the Ford Model T field vehicle¹⁶, dealing with the horses and wagon, making, packing and loading wooden shipping crates and ordering and picking up supplies. He also helped with cooking chores in the various field camps from time to time (D. Lowe, pers. comm., 2007).

A prominent visitor to the GSC camp this summer was Percy A. Taverner (1875–1947), the Federal Government’s ornithologist, and his small field support crew. Taverner was boating down the Red Deer River, collecting data and specimens for his upcoming book on the birds of western Canada (Taverner, 1926).

While visiting Sternberg, Taverner made some motion pictures of the palaeontological fieldwork. This rare footage was subsequently edited into a public film (Lloyd, 1926, p. 101). This was a 16:07 minute silent black and white film entitled *Hunting*



Figure 14. The year is 1925. The GSC crew is loading or offloading plaster field jackets. A stoneboat is visible behind the horse team. Left to right: Harold Lowe, C.M. Sternberg and Jim E. Thurston. The other boat possibly belongs to Federal Government ornithologist P.A. Taverner. Photograph courtesy of Don Lowe.

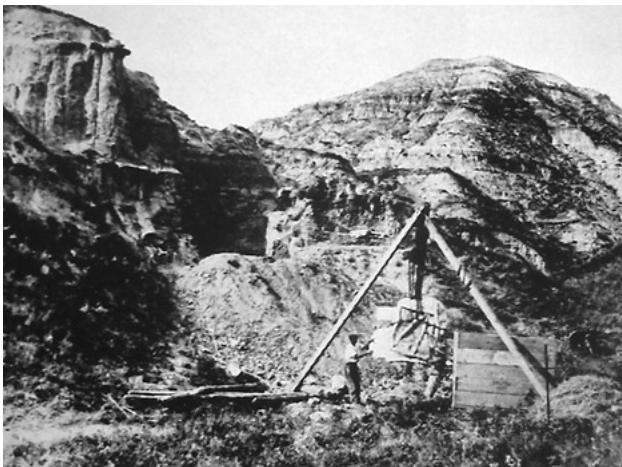


Figure 15a-b. a) Block hoisted into large field crate at 1925 CMN 8547 cf. *Anchiceratops* quarry. Jim E. Thurston steadies plaster jacket on right; other man unidentified (Harold Lowe?). The finished quarry and its scree slope are visible behind and to the left. Sternberg (1945, p. 195) states that this block weighed 3,200 pounds (1,450 kg). Similar scenes appear in Anonymous (1975, p. 307). b) The same scene on November 14, 2007: little has changed, even the scree slope below the quarry is still plainly visible 82 years later; vegetation has barely reclaimed it.

for Dinosaurs in the Badlands of Alberta. This footage has also been used in several dinosaur documentaries or television programs since the mid 1970s and was being shown to the public in Drumheller in late September 1928 (Anonymous, 1928b).

Though the footage is dark, grainy and scratchy, Harold—recognized by his cap and glasses—can be identified in several scenes: helping with the excavation work on the CMN 8547 cf. *Anchiceratops* quarry; hauling blocks from the CMN 8673

Hypacrosaurus quarry, down the steep scree slope in Applebaum Coulee; in camp stuffing hay or straw as packing material into field crates; walking alongside and guiding the horses pulling the loaded wagon away from camp; offloading the plaster jackets from a boat¹⁷ (Figure 14); and helping push the wagon up a steep river embankment. Some of these scenes are repeated in GSC still photographs (Figures 14, 15a).

The field results this summer were especially good, resulting in a number of scientific publications. These finds were as follows (the specimen found by Harold Lowe is indicated by an asterisk):

Field No. 1-1925. Petrified (silicified) tree stump. This and other tree stumps are possibly the ones mentioned in Sternberg, 1926b.

Field No. 2-1925. CMN 8796. *Sauropelodus* skull and jaws (Figure 16).

Field No. 3-1925. *Cheneosaurus* (now *Hypacrosaurus*) partial skeleton (pelvic arch, hind limbs and feet,

most of tail). Not catalogued (any specimens listed in this document as “Not catalogued” also means the specimen at the CMN in Ottawa is unprepared).

Field No. 4-1925.* Ceratopsian skull, jaws and teeth, scattered. CMN 8882. Possibly not *Anchiceratops*. Sometimes listed as *Arrhinoceratops*; currently unprepared.

Field No. 5-1925. *Cheneosaurus* (now *Hypacrosaurus*) scattered skeleton; only skull and neck vertebrae col-

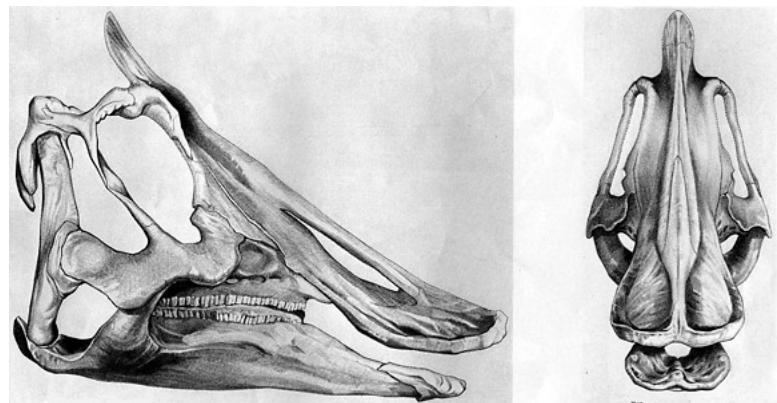


Figure 16. Skull of hadrosaur *Sauropelodus osborni* based on AMNH 5220 and CMN 8976. Scale bar = 20 cm. From Russell and Chamney, 1967.

lected. CMN 8673. This is TMP locality L1509, staked by the author on August 9, 1988. The empty quarry is at UTM 12U 364423, 5741381 (WGS 84).

Field No. 6-1925. *Ornithomimipus angustus*, four ornithomimid-like footprints (Figure 17). CMN 8513. Described in Sternberg, 1926a; see also Sternberg, 1926b and Harrington *et al.*, 2005.

Field No. 7-1925. cf. *Anchiceratops*, complete

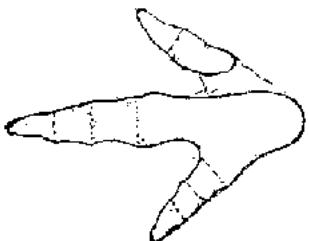
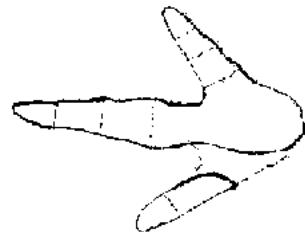


Figure 17. *Ornithomimipus angustus* ichnites; from Sternberg, 1926a.



postcranial ceratopsian skeleton (Figure 18), with fragments of frill. CMN 8547. This is TMP locality L1508, staked by the author on August 5, 1988. The empty quarry is at UTM 12U 0364062, 5741406 (WGS 84). The quarry is about 570 m southeast of the field camp location. This is the only large articulated neoceratopsian skeleton recovered from the Edmonton Group. The taxonomic validity of this specimen was challenged recently (Mallon and Holmes, 2007).



Figure 18. cf. *Anchiceratops* skeleton; CMN 8547 display at Canadian Museum of Nature, Ottawa, fall, 2006. The skull (lower jaws reconstructed) is a cast of CMN 8535, collected in 1924.

Field No. 8-1925. *Thescelosaurus edmontonensis* (type), most of skeleton (Figure 19). CMN 8537. Described in Sternberg, 1940b; see also Sternberg, 1926b.

Field No. 9-1925. CMN 8674. ?*Hypacrosaurus* most of skull of medium-sized individual, right jaws badly damaged from erosion.

Some American friends of C.M. Sternberg from Chicago visited the field camp on August 24–25. A group photograph that included Harold Lowe was taken at this time (Figure 20). Some three and a half months of fieldwork ended on September 24, but having amply proved his mettle, Harold would be called upon to join Sternberg for future fieldwork.

1926

About June 8, camp near today's Tolman Bridge was set up by Harold and James E. Thurston.

The crew explored upriver from the 1925 work area; this season saw them working both sides of the river up towards and in today's Dry Island Buffalo Jump Provincial Park. Results were not as good as 1925 and there were frequent spells of rain that interrupted fieldwork.

Harold went home briefly on July 16–18 as his daughter Connie was sick and pining for her father. At this point Sternberg must have valued Harold highly as a field man, because nowhere else in his field notes, covering decades of Alberta work, did he mention allowing a man to go home to visit his family. Any who did leave put in their notice that they were quitting.

The fossils found this season were as follows (specimen found by Harold Lowe indicated by asterisk):

Field No. 1-1926. Various leaf compression fossils.

Field No. 2-1926. *Hypacrosaurus* scattered skull. CMN 8675.

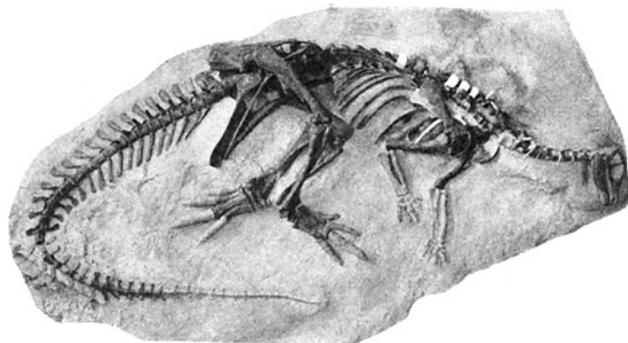


Figure 19. CMN 8537, *Thescelosaurus edmontonensis* skeleton, right lateral view. From Sternberg, 1940b.



Figure 20. Group photograph of the 1925 NMC crew and visiting friends of C.M. Sternberg, picture taken August 24 or 25, 1925. Left to right: Mr. and Mrs. Douglas Sutherland and their son Douglas (from Chicago); James E. Thurston (1905–1932) from Calgary; C.M. Sternberg's son Raymond Martin (1912–1992); Harold Lowe, age 39; Miss Mawer (Chicago); and unidentified field cook from Drumheller. Image courtesy of Dinosaur Provincial Park archives.

Field No. 3-1926. * *Hypacrosaurus*, two maxillae and two dentaries, associated.

Field No. 4-1926. Partial *Sauropelodus* skull; other parts of three hadrosaur skeletons together abandoned. Not catalogued.

Field Nos. 5, 6, 7-1926. Three closely associated small ornithomimid skeletons, all eroded. CMN 12068, CMN 12069, CMN 12070. Around 2004, TMP staff, including the author, were unsuccessful in relocating the quarry.

Field No. 8-1926. CMN 11315. Small *Albertosaurus*, eroded. Pelvis, hind limbs and feet collected. Kindle (in Collins, 1928) indicates that the forelimb of this specimen was complete.

An interesting fossil fish site was examined on the west side of the river in today's Dry Island Buffalo Jump Provincial Park and some specimens secured. These are likely from the amiid fish *Cyclurus fragosus*. The district is known for several sites yielding mass mortality deposits of this primitive bowfin fish, worked mostly by University of Alberta crews in the 1960s (O'Brien, 1969; Grande and Bermis, 1998, p.

281), though Tyrrell Museum staff have also secured a number of good fish specimens there.

A badly broken-up ceratopsian skull was examined on the east side of the river but not collected.

When the 1926 field season ended is uncertain. The Tyrrell Museum's copy of Sternberg's 1926 field notes ends abruptly on August 27 and describes the crew still hard at work.

1927

No work was done in Alberta by the National Museum of Canada this year. This may be due to new public dinosaur exhibits then under development in Ottawa. One of these was CMN 8547, the cf. *Anchiceratops* Harold helped collect in 1925 (Figure 18). Around this time Harold worked as a coal miner (see "1928").

The Harold Lowe home was moved to the north side of the Red Deer River around this time. Originally a simple tarpaper shack on the south side of town, the structure was dragged across the frozen river in winter. Old granaries were added to the original building as required, resulting in a respect-

able-sized home for the growing family. A man who grew up during this time and knew the Lowe family described the home as originally being in the “Elgin Hills” area, close to today’s location of the Hiway 9 Trucking company yards (Smith, pers. comm., 2007).

1928

The *Henderson’s Alberta Gazetteer and Directory* for 1928 (p. 233) now identifies Harold as a [coal] miner, his brother James now a bartender.

The coal mining industry in Drumheller was seasonal work. A shortage of coal cars and lower demand for heating coal in the summer months meant coal miners were usually laid off or work hours were severely reduced and they picked up work elsewhere, often helping with the harvest (Anonymous, 1920g).

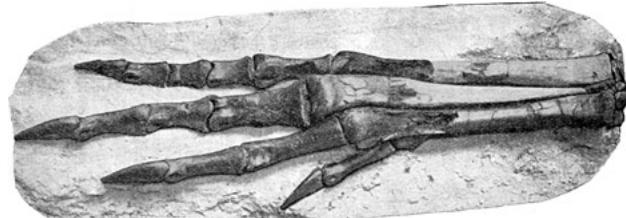


Figure 21. CMN 8538. Right pes of *Chirostenotes pergracilis*; formerly the type of *Macrophalangia canadensis*. From Sternberg, 1932c.

This summer break allowed Harold to pick up other work. Anonymous (1928a) states that Harold had received letters from C.M. Sternberg engaging him as an assistant for upcoming field work and that this work would be conducted upriver from Drumheller. However, the summer saw Harold in today’s Dinosaur Provincial Park (Anonymous, 1932a); the field camp was just southeast of the village of Steveville. Anonymous (1928a) further states that C.M. Sternberg had ordered a new expedition boat which Harold was to deliver downstream and then meet the crew in the field. This suggests that Harold may have boated between Drumheller and DPP.

Sternberg’s previous main assistant in 1923–1926 was James E. Thurston. By this time, Thurston was the curator in charge of the Calgary Public Museum and unavailable to help Sternberg, so Harold became Sternberg’s right-hand man. While contributing to the general activities, Harold also had good luck prospecting for fossils. The following were collected (material found by Harold marked with an asterisk):

Field No. 1-1928. * Trionychid turtle carapace. CMN 8712. Referred to *Aspideretoides foveatus* by Gardner et al., 1995, p. 633.

Field No. 2-1928. 45 cm-long section of crocodile tail with scutes and numerous loose scutes. CMN 13566.

Field No. 3-1928. * Trionychid turtle carapace. CMN 8711. Referred to *Aspideretoides foveatus* by Gardner et al., 1995, p. 633.

Field No. 4-1928. Mammal jaw with four molars. CMN 8536. Described by Simpson, 1930.

Field No. 5-1928. Trionychid turtle carapace. CMN 8713.

Field No. 6-1928. ?*Chirostenotes pergracilis*, right pes, part of left pes and manual phalanges. CMN 8782.

Field No. 7-1928. Partial skeleton of articulated crocodile: complete tail, pelvis, hind limbs, right pes missing. CMN 13564.

Field No. 8-1928. * *Chasmosaurus russelli* (paratype). Skull with crest in pieces, lower jaws, predentary, anterior part of neck, left scapula/coracoid, humerus, left tibia and fibula, many ribs (not collected), rest of skeleton too eroded to collect. CMN 8801. Godfrey and Holmes (1995, p. 728) state that because this specimen is missing the frill, it cannot be conclusively referred to *C. russelli*; they advocate that it simply be referred to *Chasmosaurus* sp.

Field No. 9-1928. Baenid turtle carapace and plastron. Exchanged in 1935.

Field No. 10-1928. * Large turtle, carapace and plastron, front limbs, neck and skull. Not catalogued.

Field No. 11-1928. Large trionychid turtle carapace. Not catalogued.

Field No. 12-1928. CMN 8538 (Figure 21). *Macrophalangia canadensis* (type). Foot skeleton. Now referred to *Chirostenotes pergracilis*. Described by Sternberg (1932c).



Figure 22. Skull of CMN 8703 *Lambeosaurus clavinalis* (type), right lateral view. This specimen, found by Harold, is now referred to *Lambeosaurus lambei*. From Sternberg, 1935.



Figure 23. *Leidyosuchus canadensis* skull, dorsal view. From Sternberg, 1932b.

scribed by Sternberg, 1932. Referred to *Leidyosuchus canadensis* by Wu, 2005 and Wu, et al., 2001.

Field No. 16-1928. *Procheneosaurus cranibrevis* (type); now referred to *Corythosaurus casuarius*. CMN 8633. Skull (Figure 24). Rest of skeleton eroded and not collected.

Field No. 17-1928. Small theropod, left pes and other fragmentary parts of skeleton. CMN 8539. Type of *Stenonychosaurus inequalis* (now = *Troödon*) Described by Sternberg, 1932c.

Field No. 18-1928. ?Lizard jaw (later shown to be a *Troödon* dentary); CMN 8540.



Figure 24. CMN 8633, type skull of *Procheneosaurus cranibrevis* (now *Corythosaurus casuarius*) in right lateral view. From Sternberg, 1935.

Field No. 13-1928. Baenid turtle carapace and plastron. Not catalogued.

Field No. 14-1928.* *Lambeosaurus clavinitalis* (type); now referred to *Lambeosaurus lambei*. Complete skeleton and skull (Figure 22), except left quadrate, dorsal vertebrae and left dorsal ribs, anterior ribs, left ilium, posterior 1.5 m of tail. CMN 8703.

Field No. 15-1928. Crocodile skull (Figure 23). CMN 8543. De-

Some other work was done in southwestern Saskatchewan. Sternberg's notes record the discovery of a turtle and a *Triceratops* skull there. Pieces of the frill of the latter were collected. It is presently not known if Harold participated in this work.

No actual field notes for the 1928 DPP expedition are on file at TMP, only a list of specimens collected, so specific details of the summer's work activities are unknown. C.M. Sternberg signed the guest book for the Calgary Public Museum (on file at Glenbow Museum Archives, Calgary) on July 7, suggesting field work may have started around then as Sternberg often went to Calgary at the beginning of the season for supplies and to hire a cook. When field work ended is unknown. C.M. Sternberg gave a dinosaur talk to the public in Drumheller on September 27 (Anonymous, 1928b,c) suggesting work may have ended around that time.

Harold and Daisy had another baby girl this summer, Georgina Daisy, born August 31. This new arrival no doubt impacted Harold's fieldwork this summer, possibly cutting it short.

1929

No palaeontological field work was done by the GSC in Alberta this year. Harold's activities are unknown—presumably he was still a coal miner. Local interest in developing a dinosaur museum in Drumheller began (Anonymous, 1929). Harold was to play an important role in these early museological activities (see below).

This time also marked the beginning of the Great Depression, a decade of hardships for many Canadian families, but the Lowes managed to get by.¹⁸

1930

No field work was done by the GSC in Alberta. This year saw C.M. Sternberg in northeastern British Columbia, investigating reports of many dinosaur footprints on the Peace River near Hudson's Hope. One result of Sternberg's field work this summer was the making of plaster of Paris moulds of some of the *in situ* footprints. One large ornithopod footprint mould was cast and modified into a bird bath at the Victoria Memorial Museum where Sternberg worked (Sternberg, 1932a). Sternberg promised Harold one in 1935, and the Lowes ended up getting one of these heavy concrete bird baths in early 1936 (Biggs, 1936; Figure 25). Harold's son Don remembers one at the family home in Burnaby, British Columbia in the late 1940s but it was left behind during a move.

Even though the NMC were not doing work in

Alberta in 1930, Harold was still quite active palaeontologically—but this time at the local level.

By now some prominent people in Drumheller were becoming more organized and interested in capitalizing on the palaeontological activities in the district,¹⁹ building fossil exhibits for public viewing and constructing a small local or provincial museum (Anonymous, 1930a, e).

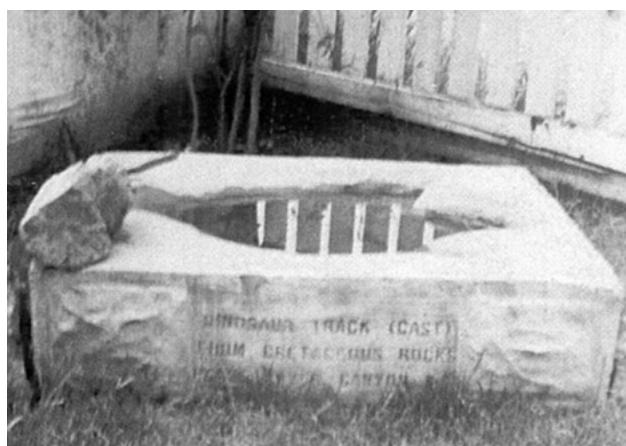


Figure 25. The dinosaur footprint bird bath in the yard of the Lowes' home in Vancouver, BC. Photo courtesy of Don Lowe.

Spearheading the Drumheller museum effort was Archie Key, the *Drumheller Mail* newspaper editor.²⁰ Harold donated a small collection of vertebrate fossils to the cause (Anonymous, 1930b), which suggests that he had a fossil collection of some sort. With his three field seasons of professional experience under Sternberg and as the only really experienced person in the district with current training,²¹ he led a small day expedition near Drumheller. The group found an associated hadrosaur skeleton in ironstone and collected parts of this and other isolated dinosaur specimens which were housed in display cases in the library's reading room (Anonymous, 1930c).²² Harold helped organize the room for display (Anonymous, 1930d) and later collected and prepared a hadrosaur jaw with teeth for exhibit (Anonymous, 1930f).

Harold was also involved with Archie Key and other Drumheller town planners to turn the “petrified forest” of tree stumps along Willow Creek, east of Drumheller, into a provincial park or protected area. He also helped in efforts to build a museum of life-size concrete dinosaurs in town (Anonymous, 1930g-i; 1931a-b,e; 1933c; 1934a-b; 1935b; 1936b).

With all this activity in mind, Harold was a virtually unknown pioneer in Drumheller natural history museology. What if a locally-run palaeontology museum had been built? Would Harold have become

its curator? If the museum had been successful and grown, would there ever have been a Tyrrell Museum in Drumheller? Or would that institution have been built elsewhere?

1931–1934

The Great Depression severely impacted the Geological Survey of Canada's palaeontological field work in Alberta. The Federal Government could hardly be seen by the suffering public to be spending their tax money on “frivolous” things such as dinosaurs. As a consequence, no field work was done in Alberta from 1931 through 1933. Some work was done in 1934 but it was conducted outside the province.

The Royal Ontario Museum (ROM), seemingly unaffected by the Depression, conducted regular, full-scale field work in Alberta most summers during this time (Dinosaur Provincial Park in 1930; Bleriot Ferry near Drumheller in 1931 and 1933; Dinosaur Provincial Park in 1934).

Levi Sternberg, the head technician at the ROM, must have known about Harold Lowe, but there is no record that Harold was involved in any ROM field activities. The local newspaper reported on the ROM digging in the Drumheller area in 1931 (Anonymous, 1931c-d) and 1933 (Anonymous, 1933a-b), so Harold would have been well aware of their presence. While he evidently did not work for the ROM, it is possible he may have visited their field camps.

Another child, the last, was born into the Lowe family. This was Don, born in Drumheller on February 21, 1932.

It is believed that during the latter part of this

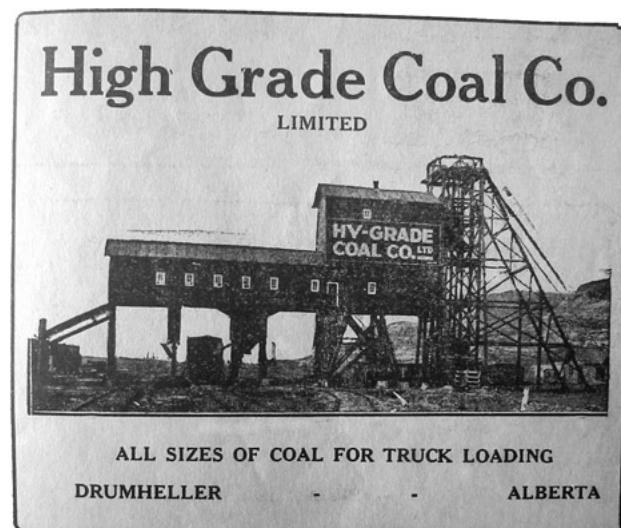


Figure 26. The Hy-Grade Coal Mine in north Drumheller as seen in this advertisement in a Drumheller Miners 1939–1940 hockey brochure.

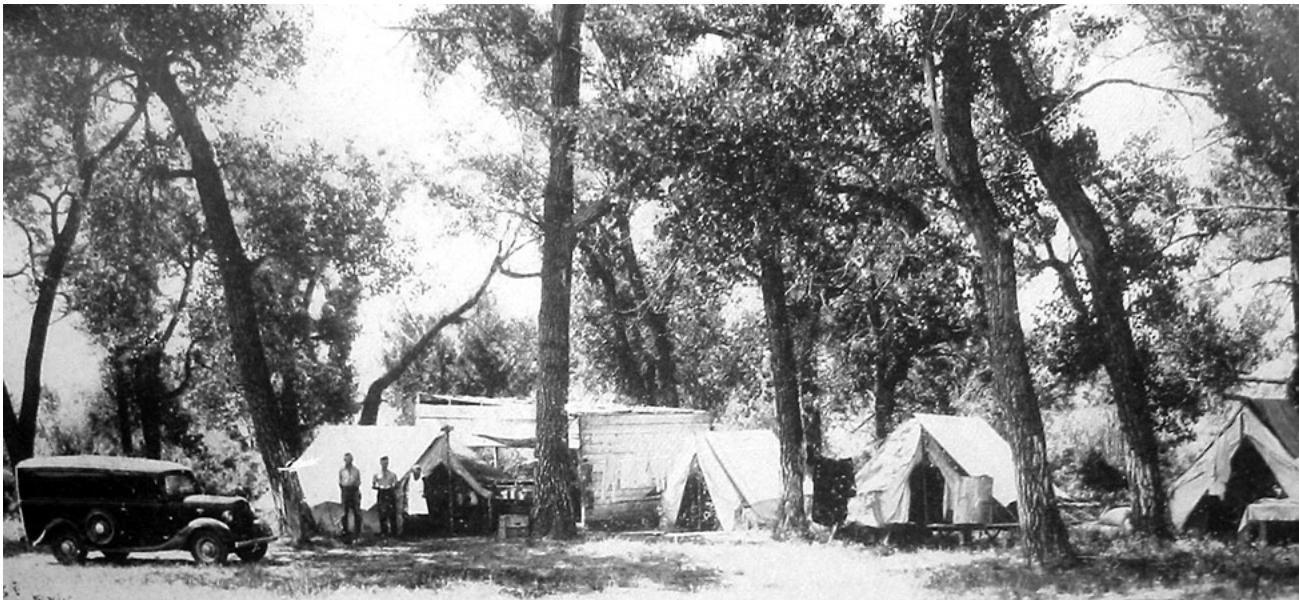


Figure 27. The 1936 GSC camp at Steveville shaded by tall Cottonwood trees. This location would be just downstream from the present-day Steveville Bridge on the north side of the Red Deer River. People in the picture are unidentified but are believed to be (left to right): Harold Lowe, Ray Martin and cook Fred Shindler from Calgary. The truck is a 1935 Ford panel van (Burness, 1978). The wooden structure is a pre-existing building for the use of campers. It is believed that this is the same site where the crew first camped in 1935.

period Harold began work at the second Hy-Grade Mine²³ (Figure 26) which had opened in 1933 and was convenient for Harold, as the family home was nearby.

1935

After a lapse of seven years, Harold resumed field-work this year, joining C.M. Sternberg in Manitoba on June 28. Sternberg was there investigating a report of mosasaur bones found in a water well on a farm 34 km (21 mi) southwest of Dauphin.

Two other good specimens had been found in the province the previous year (Anonymous, 1934c). The report was quite promising, but the marine clay walls of the well were wet and unstable and prone to slumping, making for dangerous working conditions. A new access well was constructed next to the original one, with work beginning on July 1. Making good progress, on July 18, the crew had reached a depth of 8.2 m (27 ft), cribbing the walls with wood planks the entire way.

The same day, while working at the bottom of the well, Harold suddenly felt very faint and only with great difficulty was he able to climb the long ladder and escape. On the surface he recovered. The crew was concerned about the presence of poisonous gas so they lowered a lit lantern on the end of a rope into the well and at the bottom the flame promptly went out: no poisonous gas here—just no breathable air! Harold was lucky to escape this near fatal situation.

A bellows and hose were rigged up to pump air down the well and the mosasaur's skull and other bones were safely collected. Sternberg finally concluded that as a result of all their hard labours, the farmer now had a "good well."

From here Sternberg and Lowe moved west to the Wood Mountain plateau in southwestern Saskatchewan and explored the latest Cretaceous Frenchman Formation beds, but they evidently did not find anything significant.

The pair returned to Alberta. In Drumheller, Sternberg examined an unidentified dinosaur prospect found by Lowe, indicating that he was now looking for fossils on Sternberg's behalf in his spare time. However, after they worked on it a short time, Sternberg determined it was not worth pursuing.

Base camp was set up on August 9 near today's Steveville Bridge near Dinosaur Provincial Park. Work there over the summer was more in support of other activities rather than to collect big specimens.

One of these other activities was looking for potential new fossils, but another was searching for old quarries to begin surveying-in for the map of old quarries then under development. F.P. DuVernet from the Topographical Survey was in Dinosaur Park surveying and mapping old dinosaur quarries.

The Calgary Zoological Society at this time was actively developing their new Prehistoric Park and the GSC had agreed to support their efforts (Anonymous, 1935a). The GSC group collected isolated verte-



Figure 28. Anterior portion of skeleton of CMN 34825, a subadult *Corythosaurus casuarius* collected in 1936. The specimen is seen here under preparation in 1983–1984 at the temporary facilities of TMP in downtown Drumheller. A fibreglass cast of the mounted specimen was on display at TMP for a number of years. The right forelimb seen here is not from this individual, but from another animal—one of four skeletons found in a single quarry (Evans, 2001). Preparation and photograph by Kevin Aulenback.

biate fossils in Dinosaur Park (including two fossilized tree trunks) and delivered these to the Calgary Zoo, where an artificial bonebed was created by C.M. Sternberg for public display. The Zoo's Prehistoric Park opened on August 25, 1937 (Debus, 2006).²⁴

Lowe left the group and returned home to the life of a coal miner on September 4.

1936

1936 saw Lowe again in today's Dinosaur Provincial Park, the last summer Sternberg and he would work together there. Anonymous (1936a) makes mention of the upcoming fieldwork, though the location was not disclosed, nor was Harold's involvement related here or in any of the *Drumheller Review* society columns over the summer. Camp was set up on June 13 at Steveville (Figure 27); this was later moved

to a site near the mouth of Little Sandhill Creek.

Field activities differed somewhat this year. Certainly there was the usual prospecting and collecting of fossils, but like the previous year, there was also an effort to look for old quarries, surveying them in for an upcoming quarry map showing stratigraphic and spatial distribution of important quarries (Sternberg, 1936, 1950) and marking the sites with quarry stakes set in concrete (Danis, 1988; Tanke, 1994). The two Sternbergs are believed to have done this work. Harold's actual involvement in quarry staking activities is unrecorded, so more than likely he was involved in quarry and prospecting work.

It was a brutally hot summer across the prairies (Gray, 1966) and there was no rain in DPP for several months (Anonymous, 1936c) so the crew was able to work uninterrupted.

Harold also worked improving the road that leads down into the Park today. This was and still is the only road on the south side of the Red Deer River that goes down into Dinosaur Provincial Park. Before being gravelled and then paved, this steep road was impassable when wet, but was critical for access to the early collectors not only to access the badlands and fossils but also to bring field equipment in and haul heavy plaster of Paris field jackets out. All who worked there invested much time and effort making the road passable for horse and wagon teams and—later—vehicles.

The following major specimens were collected; the discovery of two hadrosaur skeletons and a skull are related in Anonymous (1936d):

Field No. 1-1936. CMN 8776. *Caenagnathus collinsi* (type) mandibles, quarry 112. Now referred to *Chirostenotes*. This small "lost" quarry was relocated by the author (Tanke, 2005). Described by Sternberg, 1940; see also Currie *et al.*, 1993; Currie, 2005.

Field No. 2-1936. Two partial subadult skeletons of *Tetragonosaurus cranibrevis* (now *Corythosaurus casuarius*)²⁵ (Figure 28), quarry 11. One specimen was prepared and is catalogued as CMN 34825. This site had previously produced two subadult *Corythosaurus* skeletons for the ROM 1920 expedition.

Field No. 3-1936. CMN 8893. Well-preserved front half of skeleton of *Brachylophosaurus canadensis* (type); (Figure 29), quarry 103; Oldman Fm. Described by Sternberg, 1953; Horner, 1988.

Field No. 4-1936. Scattered lambeosaurine skull. Not catalogued.

Harold found a number of prospects which were

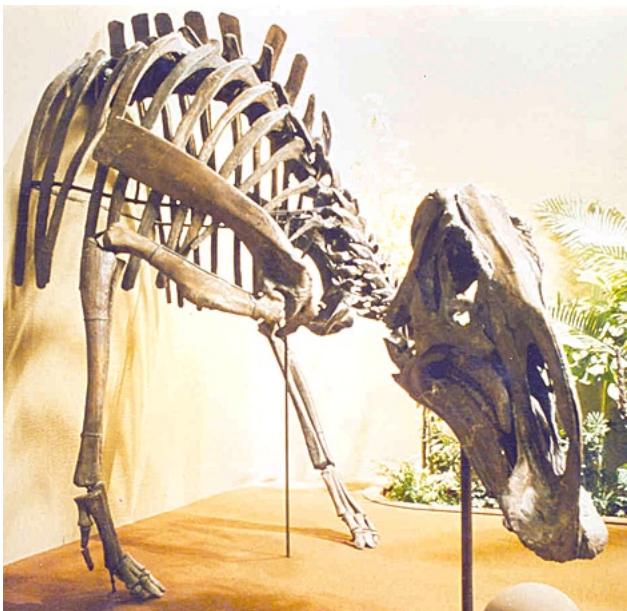


Figure 29. CMN 8893 *Brachylophosaurus canadensis* on display at National Museum of Canada in the 1970's.

examined, but none were worth pursuing. Sternberg's field notes mention Harold finding a hadrosaur manus (June 20) and collecting a small ceratopsian frill (July 8), but the status of these specimens is presently unknown.

1937

Efforts to create a prehistoric park, protected area or dinosaur museum continued in Drumheller (Anonymous, 1937a-d, f-i). Harold was no doubt involved in these activities to some degree; see the 1938 entry.

Sternberg met Lowe in Calgary on June 4. The whole crew left the next day for field work in the Manyberries, Alberta district (Figure 30). This was another hot, dry summer. Working further south resulted in the crew seeing some live reptile species not seen at other localities to the north. This summer included Sternberg and Lowe's first encounters with prairie rattlesnakes (*Crotalus viridis*). Though their bite is painful but non-lethal, Harold's first run-in with one resulted in much laughter for Sternberg, who had never seen anyone run so fast. The rattlesnakes were unwelcome around camp and Sternberg describes the killing of some in his field notes.

CMN photographs also show that the crew captured a number of eastern short-horned lizards (*Phrynosoma douglasii hernandezi*) which were kept for a time in

a box at camp.

This was to be Harold's last summer working with C.M. Sternberg. The success of the expedition and Harold's participation was reported in Anonymous (1937i). A number of scientific articles resulted from the specimens collected this summer, though some were up to six decades in coming. Anonymous (1937e) reported that a large bed of fossil mammals had been discovered in the Manyberries area; this may be an exaggeration of field numbers 9 and 10 below. The following significant finds were collected (specimens collected by Lowe marked with an asterisk):

Field No. 1-1937. "Monoclonius" skull, missing nose from behind nasal horncore forward; no lower jaws (later discarded).

Field No. 2-1937. CMN 8814. *Paratarpon apogerontus* fish skeleton missing most of head. Described by Bardack, 1970.

Field No. 3-1937. CMN 8879.* Top of a nodosaur skull.

Field No. 4-1937. CMN 8800. *Chasmosaurus skull*; top of nose and orbital horn core eroded off in the Cretaceous.

Field No. 5-1937. CMN 8797. Scattered pieces of small centrosaurine ceratopsian skull: left side of face with orbital rim; ?frontal, prefrontal, jugal, squamosal.

Field No. 6-1937. CMN 8876. cf. *Euoplocephalus* skull.

Field No. 7-1937. CMN 9813.* Part of a ceratopsian crest (Figure 31). Described by Langston, 1959. This is a significant specimen, placing *Anchiceratops* in geologically much older rocks than from upriver of Drumheller where the genus is better represented.



Figure 30. The 1937 GSC field camp near Manyberries, Alberta. Same vehicle as in Figure 27. The man near the tent is unidentified. Image from Alcock, 1948.

Field No. 8-1937. CMN 12443. *Myleaphus bipartitus* rayfish skeleton. Described by Langston, 1970.

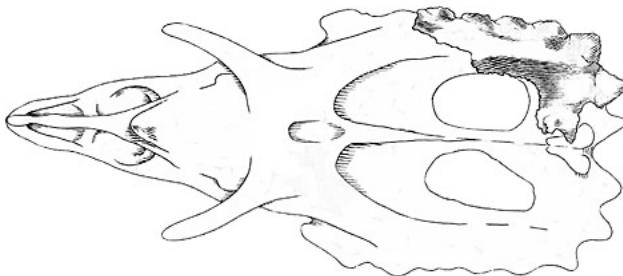


Figure 31. CMN 9813 cf. *Anchiceratops*, a piece of parietal found by Harold superimposed on a skull of *Anchiceratops longirostris* (in dorsal view) of CMN 8534. After Langston, 1959.

Field No. 9-1937. CMN 8785.* Mammal jaw with two molars. At this point in time, mammal jaws with teeth were extremely rare so this find by Harold was a significant one.

Field No. 10-1937. Mammal jaw with two molars; possibly same individual as CMN 8785. CMN 8786.

Field No. 11-1937. ?*Compsemys* turtle shell; half of carapace and most of plastron. Not catalogued.

Field No. 12-1937. CMN 8804.* Parts of small centrosaurine ceratopsian skull: two squamosals, part of parietals, a quadrate, a ?prefrontal, two postorbitals, two horn cores and other pieces. By a process of elimination, this may be the juvenile ceratopsian bonebed Wann Langston was attempting to relocate and work in 1958 (Anonymous, 1958a,b).

Field No. 13-1937. CMN 11594. *Gorgosaurus* partial skull.

Field No. 14-1937. CMN 8790. "Monoclonius" partial skull (Figure 32a-b); quarry (Figure 32c). Described



Figure 32a-b. CMN 8790. *Monoclonius lowei* skull in left lateral view (top) and dorsal view (bottom). From Sternberg, 1940a.

as *Monoclonius lowei* in Sternberg, 1940a.

Field No. 15-1937. Now TMP 66.4.1. *Lambeosaurus magnicristatus* partial skeleton with skull and skin impressions (Figures 33a-b). Described by: Storer, 1972; Evans, 2005; Evans and Reisz, 2007. Currently on display at TMP.

Field No. 16-1937. Large ceratopsian horn core. Not catalogued.

Post-field work and WWII—1938–1943

Harold continued to support efforts to build a museum or protect the Drumheller badlands and their fossils in 1938. This year marked the visitation



Figure 32c. The presumed 1937 *Monoclonius lowei* (CMN 8790) quarry; relocated in the summer of 2005. This is the only quarry that matches Sternberg's land description for this specimen. Image from PALEOBLOG website, <http://palaeoblog.blogspot.com>; also figured on same blog, dated Aug. 17, 2005.

by trade board and provincial government officials to Drumheller investigating tourism potential, trade, and creation of a prehistoric park or protected area (Anonymous, 1938a-h). Anonymous (1938c) records Harold joining one of these tours and pronouncing the Drumheller badlands superior to those in today's DPP. A prominent Drumheller doctor later acknowledged Harold's field experience and how useful he would be if a palaeontology museum were to ever open in town (Anonymous, 1938g). The local scout troop even made trails and erected signage for visiting tourists looking for fossils (Anonymous, 1938j).

NMC did no work in Alberta in 1938 or 1939 and then in the late summer of 1939 WWII erupted, ending any chance of more field work. Efforts to build a prehistoric park or museum in town continued (Anonymous, 1939a-g), though curiously, Harold is no longer mentioned in these activities. A park of sorts was created late that summer (Anonymous, 1939h), some ten years after it was first proposed.

Despite battles raging overseas, C.M. Sternberg had not forgotten his trusty field assistant. In the



Figure 33a. Field No. 15-1937 *Lambeosaurus magnicristatus* in the field. As the quarry has recently believed to have been relocated in a flat area, this elevated view may have been taken from atop the expedition's truck.

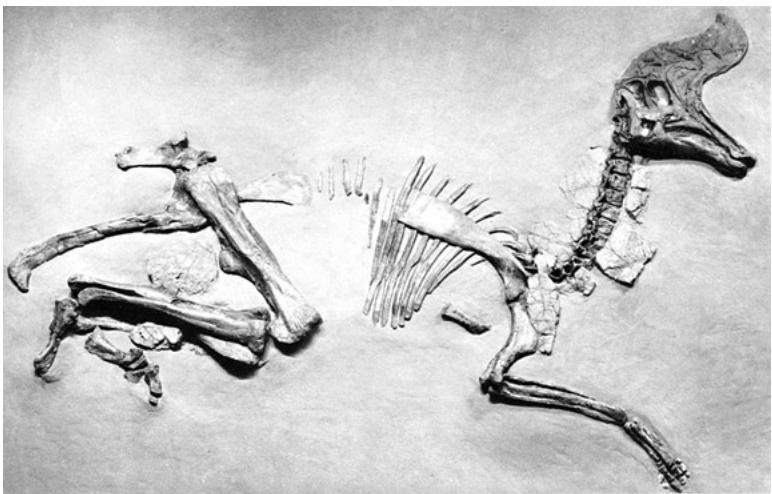


Figure 33b. TMP66.4.1. Mounted skeleton of *Lambeosaurus magnicristatus* currently on display at the Royal Tyrrell Museum, Drumheller. The opposite (left) side of the skeleton originally pointed skyward, but was badly eroded, so the specimen was turned over and prepared and exhibited from the "bottom" side²⁶. The skull is a cast; the original is in TMP collections. Skin impressions are present adjacent to the neck and right tibia. Image from Storer, 1972.

late summer of 1940, he erected the new species *Monoclonius lowei* stating: "Named in honour of Harold D.R. Lowe, who acted as field assistant for several years." (Sternberg, 1940, p. 468). This honour was extra special when you consider the following: Sternberg named thirty-seven new species of Albertan, Saskatchewan and British Columbian dinosaurs in his career.²⁷ This includes species based on body fossils and ichnospecies. Of these, twelve were named after diagnostic osteological characters, seven for geographical or geological (three) provenance. Four were named for professional colleagues Lawrence M. Lambe (honoured twice), Frank H. McLearn, and

Loris S. Russell. Harold was the only civilian Sternberg had the kindness to name a dinosaur after. *M. lowei* was not named after 1906–1907 GSC director Albert Peter Low (1861–1942) as reported in a Dinosaur Provincial Park information manual (Spalding and Spalding, 1988, p. 19). The honour to Harold was also noted in the Drumheller newspaper (Anonymous, 1940e) and the historical event related briefly later (Anonymous, 1960).

This specimen (CMN 8790; Figure 32a-b), an isolated skull, is currently undergoing a taxonomic reassessment (Dodson, 1996; Sampson *et al.*, 1997; Tumarkin-Deratzian and Dodson, 2005). It is quite possibly a sexually immature *Centrosaurus* but if so is unusually large compared to roughly similar-aged *Centrosaurus* in DPP. If so, the name *Monoclonius lowei* could be lost or changed.

Around this time Harold performed a heroic, life-saving deed. He had a bout of lip cancer that was being treated in Calgary. While on one of his driving trips to that city for treatment, Harold spied a boy in distress in the Bow River, leapt into the water and rescued him.

During the war Harold (Figure 34) had a number of jobs. Beginning in 1941, he and his wife Daisy managed the St. Regis Hotel in Drumheller for several years.²⁸ He then worked at Whitlock Lumber Yard in Drumheller. His work there also included delivering finished lumber orders to points within an hour drive from Drumheller. His son Don fondly remembers sitting in Harold's lap, steering the company's 1932 Chevrolet flat deck truck

while Harold operated the other controls. He also did odd jobs in Drumheller, relief construction work on behalf of the City of Drumheller, such as repairing or replacing worn-out planks on the pedestrian path of the town's only traffic bridge, culvert repairs, and yard work for some of the town's prominent doctors and lawyers.

Always looking out for ways to support his family, he then bagged and saved the lawn clippings for resale to local people as feed for their livestock. When the family had chickens, they would be fed with food scraps from the hospital where a friend of the family worked (Smith, pers. comm., 2007). Harold and his

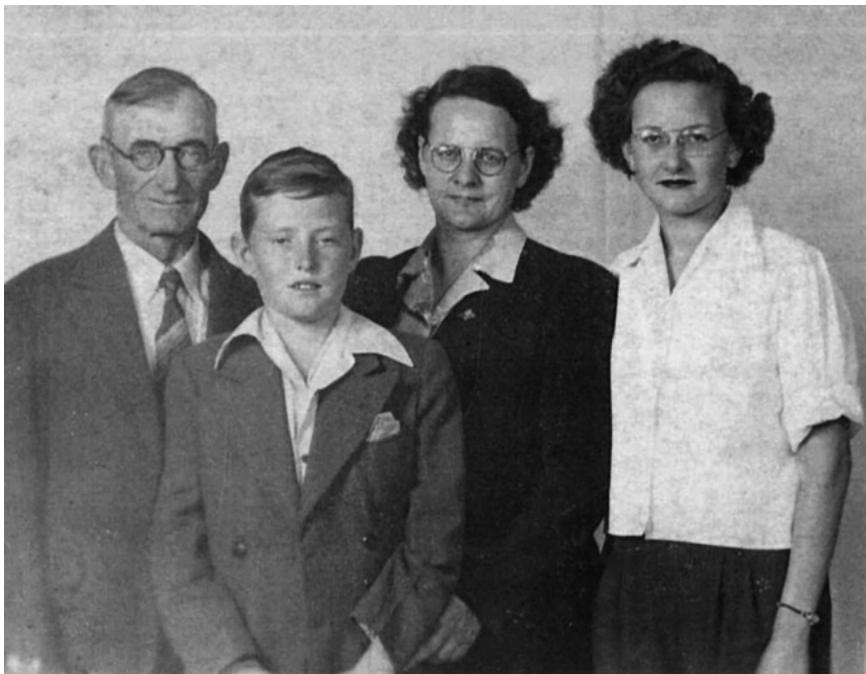


Figure 34. The Lowe family in Drumheller during the summer of 1944, soon before their departure for a new start in British Columbia. Left to right: Harold, Don, Daisy, and Georgina. This photograph was for official identification purposes as it was still wartime and the family was thinking of driving into the United States on their way west. Daughter Connie is missing as she is now serving in the CWAC. Photograph courtesy Don Lowe.

wife also did some office janitorial work for some doctors and lawyers in town.

Also during this period, Harold is again acknowledged as a valuable resource in case a dinosaur museum was ever built in Drumheller (Anonymous, 1943b). This is the last time in the local paper that Harold is mentioned in this regard.

The Drumheller newspaper society column also relates several times how the Lowes hosted dinner at their home for overseas militiamen—these were pilots and other servicemen, undergoing training in Calgary, who had met the Lowes' daughter Connie.

Leaving Drumheller—1944

Harold and his family (Figure 34) moved away from Drumheller on August 17, 1944. Their departure is noted in Anonymous, 1944c. At this point Harold was 58 years old. Drumheller's climate and the years of hard work were catching up with him. By now he had spent a number of years working as a coal miner at the Hy-Grade Mine. This was filthy, dangerous work and he did not want his son to become a coal miner. A perusal of the local papers of the time show that serious injuries and deaths were a regular occurrence in the Drumheller coalfields (see also Hlady, 1988b). Digby (2007a) notes that between 1911 and 1964, an average of three to four Drumheller miners died each year in mining accidents in what was

considered a relatively safe coal field. Injuries and fatalities usually affected one man at a time, so the community was shocked in 1941 when a methane gas explosion led to the deaths of three miners and a would-be rescuer.

Harold really wished for his children to have a better life elsewhere and his family ties to the valley at this point were largely gone. The last of his parents had passed away the year before and two of his brothers now lived far away. Eldest daughter Connie was now a young woman and beginning a life of her own.

Plans for a prehistoric park had finally succeeded (Anonymous, 1939h), but the longed-for dinosaur museum in Drumheller had failed; its main promoter Archie Key had moved to Calgary and was active in other pursuits. With

the war on no dinosaur museum was going to happen anytime soon. Another possible contributing factor to the family leaving was the flooding of the nearby Michichi Creek and Red Deer River which had flooded the Lowe home and many other North Drumheller residences and businesses (Anonymous, 1940a-d).

Friends told the Lowes about the nice climate of coastal British Columbia and new work and family opportunities there. It was good advice. In just three years a huge oilfield would be discovered near Leduc, signalling the beginning of the end for much of Alberta's coal industry. A year after that, Drumheller suffered another bad flood and the former Lowe home was again inundated.²⁹

Life and death in British Columbia

The Lowes settled in Burnaby, B.C. The family loved their new surroundings with the pleasant climate, mountains, trees, fresh air and opportunities for their younger children. The grimy, coal dust days of Drumheller with its endless coal trains, steam whistles and clanking coal mine machinery were left far behind.

Soon after his arrival Harold found work as a janitor and maintenance man at The Honeydew restaurant. Later on he was a merchandise shipper/receiver for Black Brothers Wholesale Automo-

tive. He worked there for about eight years (though interrupted by a heart attack in 1949) and worked right up to the day before his death. On September 3, 1952, Harold was admitted into the St. Paul's Hospital with heart problems. Later the same day he suddenly suffered a fatal massive heart attack brought on by coronary sclerosis. He was 66 years old. Thus ended the life of one of C.M. Sternberg's most trusted field men and an important contributor to early Albertan vertebrate palaeontology.

In his history of Canadian dinosaur discoveries and collectors, Russell (1966, p. 26) included Lowe among three of C.M. Sternberg's "outstanding assistants." This comment was fact-based, as Russell and Lowe's careers were concurrent—so they must have known each other. Regarding Harold, Russell writes:

"Harold Lowe of Drumheller was a member of many of Sternberg's field parties from 1924 [sic] to 1937. Although not specifically interested in palaeontology, he was a good fossil finder and a skillful field worker."

Harold was buried in the Forest Lawn Cemetery in Burnaby, B.C. on September 6, 1952 (Anonymous, 1952a; Figure 35).

Harold's son Don described his father as quiet and soft-spoken. He did not talk much but when he did he had something important to say. He was an



Figure 35. Harold D'acre Robinson Lowe's headstone at Forest Lawn Cemetery, Burnaby, B.C. East view lot 533, grave #2.

excellent whistler both in song or mimicking native bird calls, a point also noted in Paetz (1984). Harold was also fond of bicycle racing and was quite nimble, capable of walking on his hands and sometimes for fun joining the neighborhood kids skipping rope: he could jump expertly no matter how fast they turned the ropes. A short note in Anonymous (1944b) regarding the Drumheller Miners hockey team roster suggested he was a fan. Ever mechanically inclined and good with his hands, local residents marvelled

at his two-seater outhouse³⁰ and his motorized water well pump, one of the first in Drumheller.

The rest of the Lowe family

One question often raised by readers of an historical document of this type is "what became of the rest of the family?" For completeness, those details are briefly outlined here.

Harold's father Matthew Booth Lowe died on June 23, 1932 (Anonymous, 1932b,c) in Drumheller at the age of 74.

Harold's mother, Sarah Ann Lowe also passed away in Drumheller, at the age of 80, on March 29, 1943 (Anonymous, 1943a).



Figure 36. Mr. and Mrs. Matthew Booth Lowe, on their 50th wedding anniversary in Drumheller, November 7, 1931. From Anonymous, 1931f.

They are buried together in the Drumheller Municipal Cemetery, though sadly there are no headstones at their gravesites and it appears none were ever placed. They celebrated their 50th wedding anniversary on No-

vember 7, 1931 (Anonymous, 1931g, h; Figure 36), the second couple in Drumheller to do so (Anonymous, 1931f). Both were widely regarded in the Drumheller community.

After Harold's passing, his widow Daisy was married for a third and final time, to American Fred Walburn, a retired electrician who worked on electric locomotives operated by the Great Northern Railway in Washington State.

She passed away in Burnaby, B.C. on September 1, 1973, age 84 (Anonymous, 1973), afflicted with cancer. Her ashes were scattered over Harold's grave in Burnaby, B.C. With her passing, her husband Fred lost the will to live and died soon after.

Matthew Robinson Lowe (Figure 37), Harold's eldest brother, died in San Diego, California on January 17, 1944 at the age of 60 (Anonymous, 1944a). One gets the sense that he was the entrepreneur of the four brothers, helping run a bus company in Banff, starting the Drumheller Bus and Taxi Company, arranging for the shipping of goats from England to the Youngstown district (Anonymous, 1919a) and building and running a Drumheller boarding house (1919c). Anonymous (1944) states that he left Drum-

heller around 1924. Details of his life and work in California are not well known. He was married and had one son, Norman Matthew.

Following the sale of the Lowes' taxi and bus company, Thomas E. Lowe bought and started running the Whitehouse Hotel Grill in Drumheller early in 1925 (Anonymous, 1925), moving to Drumheller from Youngstown and having been in the restaurant industry in Calgary several years previously. He is listed as living in Montreal in 1932 (Anonymous, 1932c) and 1944 (Anonymous, 1944). Few details of him are known; given his background, perhaps he was involved in the restaurant industry there. He seems to have lived in Calgary prior to the rest of the Lowes moving to Drumheller, though I could not



Figure 37. Matthew Robinson Lowe in later years. The palm tree in the background indicates this picture was likely taken when he resided in San Diego, CA. Photograph courtesy of Don Lowe.

find him listed in the period Henderson Directories. He gained some recognition in the summer of 1918 when he beat the world champion sack racer, J.P. Taylor, during an unsanctioned race in Youngstown (Anonymous, 1918a-c). When his brother James passed away in 1971, Thomas' name did not appear among the surviving relatives, suggest-

ing that he was deceased by then. It is presently not known if he was married or had any children. What became of him is a Lowe family mystery.

James Anthony Robinson Lowe (Figure 38), the youngest son, stayed behind and lived in Drumheller the rest of his life. His life's work is not well known either. An active member of the Great War Veterans Association, he was a bartender at the Whitehouse Hotel in the mid 1920s and also served as a ferryman for a time near the end of WWII in Rosedale, Alberta (Haestie, 1986, p. 144, 175).³¹ He died in Drumheller on December 3, 1971, aged 84. Given his past military service, he was buried in the Field of Honour of the Drumheller Municipal Cemetery on December 8, among other servicemen there (Anonymous, 1971).

Although apparently a jovial character, James was a bit of a loner and never married.

Of Harold Lowe's children (Figure 39), Consuelo "Connie" Wilson (Lowe) died on September 10, 1976, in Oregon City, Oregon, following surgery for a brain aneurysm. She served in the CWAC during most of WWII (Figure 40). In April, 1946, she married France Howard Phillips, a British Royal Air Force pilot who was awarded a Distinguished Flying Cross medal (Anonymous, 1946), but the marriage was annulled. She later married George Wilson, an ex-WWII U.S. Navy pilot. He was later employed by the Wearever Company, known for their durable aluminum pots and pans. They resided in Kansas City, KS for a number of years. They had a son, Gerald Allan, and daughter, Timitha Diane. Her brother Don described her as outgoing and adventurous.

Georgina Daisy Simonetta (Lowe) (Figure 41) passed away in White Rock, B.C. on February 19, 2006, aged 77. Anonymous (1944b) states that, like her sister Connie, she too was



Figure 38. James A.R. Lowe in Drumheller, 1927. Photograph courtesy of Don Lowe.

about to join the CWAC though with the war winding down, this did not happen (D. Lowe, pers. comm., 2007). Her first husband, Arthur E. Emmerson, was lost overboard in mysterious circumstances while serving as a meteorologist on the Canadian Department of Transportation deep sea weather ship *HMC Stone Town* while stationed in the Pacific hundreds of miles west of Vancouver Island. They had one child, a daughter, Consuelo Donn, born in 1953. Georgina later married Joseph Simonetta, a barber, and they had two more children: Nancy (b. 1963), Ann (b. 1965), with stepson Joseph Jr. and two stepdaughters, Mona and Teresa,



Figure 39. The children of Harold and Daisy Lowe, c. 1936 (left to right: Consuelo "Connie" (1923–1976), Georgina (1928–2006) and Don (b. 1932). Image courtesy of Nancy Simonetta.

from Joseph's previous marriage now added to the family. Her brother Don described her as being interested in history, but sadly she passed away about 10 months before the author made contact with members of the Lowe family, so her family memo-

ries could not be worked into this project.

Don Lowe (Figure 42) is alive and well in Kelowna, BC, age 76. He married Elizabeth "Betty" Evadna MacPherson of Fernie, B.C. They had four children: Elizabeth Louise (1955–1958), Donald Craig (b. 1960), Harold John (died age 2



Figure 40. Consuelo "Connie" Lowe, during WWII, in her C.W.A.C. (Canadian Women's Army Corps) uniform.

weeks in 1961), and Elizabeth Helene (married name Hibbitt), b. 1962. Don started working at the *Vancouver Sun* in the advertisement service department, as a deliveryman for several drugstores, and then helped in landscaping at the Jasper Park Lodge where his work is still visible.

As a young boy, he had joined the Air Cadets in Drumheller in 1943–1944 and had a long fascination with aircraft, inspired by the bright yellow Harvard/AT-6 fighter trainers occasionally flying low over Drumheller during the war.³² It was logical then that in 1954 he joined the Canadian Air Force. For 22 years he worked as an aero engine technician on F-86 Sabre fighters and CL-30 (T-33) trainers; as an aeronautics technical manual writer; and a large number of other duties related to Canadian Air Force plane maintenance and mission readiness. He served overseas with NATO forces during the tense Cold War period and also once served in an honour guard during a base visit by American President John F. Kennedy. He retired from the military with a rank of Corporal, though he did decline several rank advancements so he could continue working on the aircraft he loved instead of being a supervisor and doing paperwork.

Returning to Canada, he then started as a patrolman for Hiram Walker Distilleries in Kelowna, rising from patrolman to head of security over a 22 year period. He retired in 1975. Following this, he considered returning to Drumheller and getting a job in the security department at the Royal Tyrrell Museum soon after it opened, even going to the museum and getting an application form; but he never went through with it. He has many fond childhood memories of Drumheller and visits when he can. He was an important source for much of the Lowe family history contained herein.

The Harold D.R. Lowe family home

Remarkably, the Lowe family house still exists today. After the Lowes left, a number of families called it home. In the mid to late 1980s it was a submarine



Figure 41. Georgina D. Lowe, age 16, early 1944, in Drumheller.



Figure 42. Don Lowe and the author in Kelowna, BC, on May 25, 2007. Photograph by Patty Ralrick.

sandwich shop and later a video rental store. Today it is the Old Grouch Restaurant, a popular hangout for some of the Royal Tyrrell Museum scientific staff, Figure 43.

Text notes

1. A “carter” is a British job term for the operator of a (usually) two-wheeled cart used for the light transport of provisions, general merchandise, or people.
2. James’ birth date was gained from his attestation papers at the Canadian Expeditionary Forces website: www.collectionscanada.ca/archivianet/cef/index-e.html Birthdates for most other family members are unknown at this time.
3. Homestead application for Harold D’acre Robinson Lowe found on microfilm (reel number GL 2136; file number 1943243) at Provincial Archives of Alberta, Edmonton, AB.
4. The Big Stone district derives its name from a large red granite glacial boulder, now displayed near the Blood Indian Creek Reservoir Park.
5. Long (1960) lists Big Stone as being in section 34-25-4-W4M, or $51^{\circ}12'N$, $111^{\circ}12'W$. The community of Big Stone was moved about 4 km north around 1990. Today consists of little more than a store/gas station, a residence, and just off to the west a community hall, regional equipment maintenance yards, rodeo grounds and the popular fishing location Blood Indian Park, formed by the 1965 damming of the Blood Indian Creek. The Big Stone store today is at UTM 12U 0486730, 5677451 (WGS 84) or $51^{\circ}14'53.00''N$, $111^{\circ}11'26.40''W$.
6. This land is now owned and farmed by Darcy and Linda Lockhart, who have been on the land there since the fall of 1982. They dry land farm there, growing hay, barley and mustard. Others in the area raise beef cattle. Youngstown has not fared well over the years. A roaring concern early on, its population now stands at about 180.
7. The old Big Stone Post Office building existed until about 2003 when it was burned down along with some other derelict buildings.
8. During WWI, Alberta had the highest enlistment and casualty rate in Canada. About 49,000 Albertans served overseas. Of these almost half were wounded in action and 6,140 died.
9. The author could find nothing on this man in the Youngstown local history book.
10. For an excellent illustrated history of early Drumheller’s coal industry, see Hlady, 1988a.
11. Online marriage records in England have only been partially transcribed for this time period.
12. It is presently unknown when Harold gave up farming for good. He may have sold out to Albert Paetz.
13. The second company was possibly the “300” Taxi Line owned by the Shortreed family.
14. No Bouge was found in period Henderson Directories for Calgary and district. Who he was is presently unknown.
15. Research on Thurston, another poorly known character in the early history of Albertan vertebrate



Figure 43. Old Grouch Restaurant, 87 Bridge St., Drumheller, AB, in 2007. The restaurant is located a couple blocks north of the traffic bridge in Drumheller, on the west side of the road. The restaurant moved from a downtown location and into the former Harold Lowe home in 1994. C.M. Sternberg spent the nights of August 3–5, 1935 here while looking at some dinosaur material Harold had found locally.

- palaeontology is underway (Rowland and Tanke, 2007; in prep.).
16. On April 29, 2006, the author, using a metal detector at the site of the GSC 1925 field camp, found two broken and adjoining curved metal pieces, forming half of a Ford Model T brake shoe. This was found several centimeters underground and away from their garbage pits; presumably buried through pedogenesis. With his mechanical background, could Harold have removed and replaced this brake shoe?
 17. There was no good road and of reasonable grade able to handle a heavy wagon on the east side of the river near where their camp was located, so the loads were floated across the river to a suitable road on the west side.
 18. For a good read on a family's survival and experiences while on "relief" (welfare) during the Great Depression see Gray (1966). While some of the story is based in Winnipeg, Manitoba, the experience was shared by hundreds of thousands of western Canadians.
 19. Though Barnum Brown of the American Museum of Natural History worked far upriver in 1910–1912, the first real palaeontological expedition in the Drumheller district proper was in 1912, with additional expeditions later working upriver between Munson Ferry and Tolman Bridge. The 1912 expedition was the first hired by the Canadian Federal Government (Geological Survey of Canada; GSC) to compete with Barnum Brown who was then leading a group working upstream of the Morrin Ferry (now Bridge) area. The main 1912 GSC crew consisted of Charles H. Sternberg and his sons Charles M. and Levi. Abe Easton was the teamster. Eldest son George worked for the AMNH this summer.
 20. Archibald "Archie" Frederic Key (1894–1989) was a newspaper editor in Timmins, Ontario and then in Drumheller. He arrived in Drumheller in 1927 (Key, 1973) and resided in town close to twenty years. In 1930 he ran in provincial elections. A political ad in the Drumheller Mail dated June 19, 1930, p. 2 states some of his campaign promises as: "Provincial parklands to attract tourists to the Drumheller dinosaur beds and petrified forest and a Provincial museum for housing dinosaurs." His political efforts were largely for naught, but he did get a surprisingly large number of votes. After WWII military service in Calgary, he was the director of the Calgary Allied Arts Centre and has recently been linked by the author to the controversial dispersal and destruction of some of the former Calgary Public Museum holdings which included Albertan dinosaur material secured by amateur collector William E. Cutler. From 1965–1968 Key was the director of the Canadian Museums Association and wrote several books on museology and did museum and arts organizations consulting work. The University of Calgary awarded him an honourary Doctorate and he was also awarded the Order of Canada. Key lived to see a series of dinosaur museums in Drumheller, culminating with the Tyrrell Museum in 1985 (Key, 1981). He died in Calgary. For more information on Key, see Forbes (1997).
 21. Others in the Drumheller area with professional or advanced palaeontological field experience were:
 - 1) Wilfred G. Hodgson (1885–1971) who lived in the Dorothy, AB area (University of Toronto expedition to the Drumheller district, 1912; ROM 1918 and 1919 expeditions to DPP).
 - 2) Carl F. Jungling (c. 1875–1942), who lived in nearby Orkney, AB. He did not dig with museum crews (local newspaper accounts say he worked with C.M. Sternberg, but there is no mention of him in Sternberg's fieldnotes), but was a competent amateur dinosaur bone collector with his own private fossil museum in his home during the 1930s.
 - 3) Dan Magee (McGee?) who lived on Michichi Creek close to Drumheller was with the GSC crew in DPP in 1913, but his resident status in Drumheller in 1930 is uncertain.
 22. True fossil exhibits intended for tourism purposes would come later, first in 1957 with small exhibits in the swimming pool building, then a small museum finally opening in 1963 and the \$36 million Tyrrell Museum of Palaeontology opening on September 25, 1985.
 23. The last surviving building from this mine was torn down January 25, 2007 (Murray, 2007). The mine operated from 1933 to 1962; though Wrigley's (1922) mentions it being active at least as early as 1922. It seems likely there were two mines with the same name—the first operated on the south side of Drumheller, the second opening up on the north side of town later.
 24. This park had a strong influence on the author to pursue a palaeontological career. As a boy, it was his favorite place to visit during family summer weekend outings to the Calgary Zoo.
 25. For other discussions on subadult lambeosaurine taxonomy see Evans *et al.*, 2005; Stokstad, 2006; Dodson, 2007.
 26. The specimen was prepared at the Provincial Museum of Alberta in Edmonton, largely by John Poikans around 1966–69. While writing this article, the author realized that Poikans had retired to Kelowna, BC, the same town Harold Lowe's son Don resides in. The author alerted Don to this fact and he (Don) was attempting to make contact only to learn from a newspaper obituary that Poikans had passed away at age 87 just a few days previously! For more information on Poikans, see Tanke, in prep.
 27. Certainly a number of Sternberg's dinosaur species have not survived subsequent taxonomic revisions, but this point is made in the historical context of those times.
 28. During this time the Lowe family rented out their house and lived at the St. Regis Hotel.
 29. A photograph of the Lowe home and neighborhood

- during the 1948 flood appears on page A3 of the Drumheller Valley Times, Tuesday, January 9, 2007. See: www.valleytimes.ca/online/2007%20issues/Jan.%202007/Jan.%209_07/drv_20070109_a24_03.pdf
30. The real function of a two-hole outhouse is lost on most people. It is not a joke, nor meant to provide a place to go for two people at one time. During the cold winter, solid bodily wastes in the outhouse quickly freeze and pile up. With the coming of spring and summer the gruesome mass would thaw and collapse down. In a large family during a long cold prairie winter, the need for a practical “two-holer” is readily apparent.
31. A Jim Lowe appears in two photographs in Hlady, 1988e, p. 993, 996, but serving on the East Coulee ferry. It is uncertain that this Jim Lowe and James A.R. Lowe are one and the same although they bear a marked resemblance. He may also have operated the Cambria Ferry, downstream from Drumheller (Smith, pers. comm., 2007).
32. These trainers and other types of trainers were part of the British Commonwealth Air Training Plan. 231 training sites and airbases were scattered across western Canada. Men from far-flung Australia, New Zealand and elsewhere joined Canadians for basic and advanced training prior to joining squadrons fighting overseas. In western Canada, 167,000 personnel were trained between May 1940 and March 1944, of whom 50,000 were pilots.

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Efforts have been made to gather the widely scattered evidence to present an accurate rendition of events. The author assumes responsibility for any historical errors or omissions. The author welcomes any new Lowe family history.

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- Note: Dedicated microfilm search efforts were made to source every newspaper article, but in several cases, they could not be found. These are identified as “unsourced newspaper article”.
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- Anonymous. 1918a. Champion Taylor beaten in fast time by a youngstown sack racer. Unsourced newspaper article. Monday, August 5, 1918.
- _____. 1918b. Champion Taylor is beaten yesterday. The Calgary Daily Herald, Saturday, August 3, 1918, p. 24.
- _____. 1918c. Youngstown man wins sack race. Youngstown Plaindealer, Thursday, August 8, 1918, p. 1.
- _____. 1919a. Will Matt. Lowe get your goat? The Drumheller Mail, March 20, 1919.
- _____. 1919b. Indian Day at Banff Monday and Tuesday, July 28–9. Crag & Canyon (Banff, AB newspaper), Saturday, July 26, 1919, p. 1.
- _____. 1919c. Youngstown honour roll. The Plaindealer (Youngstown), Thursday, August 14, 1919, p. 7.
- _____. 1919d. Local happenings. The Plaindealer (Youngstown), Thursday, August 28, 1919, p. 7.
- _____. 1919e. Local happenings. The Plaindealer (Youngstown), Thursday, October 23, 1919, p. 8.
- _____. 1919f. Locals and general. Drumheller Mail, Thursday, November 13, 1919, p. 12.
- _____. 1919g. Local happenings. The Plaindealer (Youngstown), Thursday, November 20, 1919, p. 7.
- _____. 1920a. Mining situation in Drumheller valley is fast righting itself. O.B.U. leaders activities have not diminished the coal output. The Calgary Daily Herald, Friday, January 2, 1920, p. 15.
- _____. 1920b. Apprehension as to coal supply for the winter. The Calgary Daily Herald, Thursday, January 8, 1920, p. 6.
- _____. 1920c. Coal mining situation in Alberta threatened by many complications. The Calgary Daily Herald, Monday, January 12, 1920, p. 1.
- _____. 1920d. Record coal shipment. The Calgary Daily Herald, Monday, January 12, 1920, p. 9.
- _____. 1920e. Crisis in coal mining fields next Saturday. The Calgary Daily Herald, Wednesday, January 14, 1920, p. 9.
- _____. 1920f. Alberta commission to encourage and protect coal industry assured. The Calgary Daily Herald, Friday, January 16, 1920, p. 6.
- _____. 1920g. Miners scarce at Drumheller. The Calgary Daily Herald, Saturday, August 28, 1920, p. 6.

- ____ 1925. Heard around about town. The Drumheller Mail, Thursday, February 26, 1925, p. 1.
- ____ 1928a. Bone yard again to be visited by savants this year: geologists to first visit southern Saskatchewan to inspect new discoveries. The Drumheller Mail, Thursday, May 3, 1928, p. 1.
- ____ 1928b. Dawn of existence will be discussed by govt. geologist: hunting dinosaur in the bad lands of Alberta to be on movies. The Drumheller Mail, Thursday, September 20, 1928, p. 4.
- ____ 1928c. Skeletons buried for three million yrs. In bad lands. The Drumheller Mail, Thursday, September 27, 1928, p. 1.
- ____ 1929. A local need. The Drumheller Mail, Thursday, September 5, 1929, p. 3.
- ____ 1930a. Ready to create museum in town, collect exhibits. A.F. Key authorized to gather exhibits and provide suitable accommodation. The Drumheller Mail, Tuesday, March 22, 1930, p. 1.
- ____ 1930b. Donations made to collection of local museum, display cases being made to hold exhibits, Harold Lowe gives specimens. The Drumheller Mail, Thursday, April 3, 1930, p. 1.
- ____ 1930c. Dinosaur bones collected for the proposed museum, many interesting specimens now in possession of Library Board following appeal. The Drumheller Mail, Thursday, April 17, 1930, p. 8.
- ____ 1930d. Small collection of dinosaur bones now in Library. The Drumheller Mail, Thursday, May 15, 1930, p. 1.
- ____ 1930e. Provincial Museum. The Drumheller Mail, Thursday, July 10, 1930, p. 3.
- ____ 1930f. Found jawbone of dinosaur; will be placed in Library. The Drumheller Mail, Thursday, August 14, 1930, p. 1.
- ____ 1930g. Petrified forest area should be provincial park, commission urges govt. to develop lands, would compare with Arizona petrified forest, local town planners suggest opportunity for relief work in developing potential tourist attractions. The Drumheller Mail, Thursday, August 21, 1930, p. 2.
- ____ 1930h. Osbourne sees bright future despite present depression, says Drumheller is ideal manufacturing centre; should also attract tourists to dinosaur beds and petrified forest; make comparisons with twenty-five years ago. The Drumheller Mail, Thursday, September 18, 1930, p. 1.
- ____ 1930i. Town planners consider zoning at next meeting. The Drumheller Mail, Thursday, October 23, 1930, p. 4.
- ____ 1931a. Government will protect bad lands Drumheller area, Horace L. Seymour, of the Provincial Parks Board making survey here this week. The Drumheller Mail, Thursday, August 6, 1931, p. 1.
- ____ 1931b. Protected area to be established in this district, H.L. Seymour to recommend action by the Parks Board to guard against vandalism. The Drumheller Mail, Thursday, August 6, 1931, p. 1.
- ____ 1931c. Unknown dinosaur species believed found in district: Levy [sic] Sternberg of Toronto University, excavates three excellent specimens on prospecting trip. The Drumheller Mail, Thursday, August 13, 1931, p. 1,6.
- ____ 1931d. Munson. The Drumheller Mail, Thursday, September 24, 1931, p. 2.
- ____ 1931e. Preservation of relics feasible in district. The Drumheller Mail, Thursday, October 8, 1931, p. 3.
- ____ 1931f. Golden wedding. Unsourced newspaper article. Thursday, November 5, 1931, p. 1.
- ____ 1931g. Well-known citizens celebrate their golden wedding anniversary: Mr. and Mrs. Matthew Booth Lowe married November 7, 1881, had many callers. The Drumheller Mail,
- Thursday, November 19, 1931, p. 1.
- ____ 1931h. Drumheller residents celebrate anniversary. The Calgary Daily Herald, Saturday, November 21, 1931, p. 21.
- ____ 1932a. Writes article on dinosaur feet from Steveville district. The Drumheller Mail, Thursday, June 23, 1932.
- ____ 1932b. Obituary: Matthew Booth Lowe. The Drumheller Mail, Thursday, June 30, 1932.
- ____ 1932c. M.B. Lowe, pioneer of Drumheller, dies. The Calgary Daily Herald, Friday, June 24, 1932, p. 23.
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2008 Field Trips

By Wayne Braunberger

Planning is well underway for this year's trips. A wide variety of trips is offered so there should be something for everyone. For more information please contact Wayne Braunberger at (403) 278-5154 or by email at events@albertapaleo.org. The field trip registration form is included with this issue of the *Bulletin* and is available on the APS website (www.albertapaleo.org). Information will also be available at the monthly meetings.

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). Detailed information will be provided to all those registered shortly after the registration deadline.

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.

Trip 2008-1, June 21 & 22, 2008 Central Alberta foothills

This will be a two-day trip with stops at Ram Falls and Bighorn Dam as well as a number of roadside stops. The overnight stop will be at Nordegg. There are numerous campgrounds in the area and you may also stay at the motel in Nordegg. If you are planning on staying in the motel be sure and book early. The registration deadline is June 6, 2008.

Trip 2008-2, July 19 & 20, 2008 Flathead Valley, southeast British Columbia

A two-day loop through the Flathead Valley is planned, visiting a number of palaeontological sites. Preliminary plans are to begin in Fernie and end the trip at Corbin. More information will be available in the June *Bulletin*. The registration deadline is July 4, 2008.

Trip 2008-3, August 16 & 17, 2008 Southeast Alberta & southwest Saskatchewan

On the first day we will visit the Ravenscrag Butte-Eastend area of Saskatchewan. Preliminary plans include a tour of the Eastend Museum and a visit with "Scotty" the *T. rex*. If time permits, Day Two will include stops in southeastern Alberta. Further information will be available in the June *Bulletin*. The registration deadline is August 1, 2008.

For the 2008 field trips I will be sending you the waiver and medical forms 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 less time will be spent on paperwork prior to the trip. All participants are required to have fully completed all waiver and medical forms in order to attend the trip. All personal information is held in confidence and is ultimately destroyed.

Paleo Rangers Field Trip

Trip 2008-PR1, May 25, 2008 (Sunday) Canyon Creek, Alberta.

This will be a one-day trip for Paleo Rangers (children of the APS under the age of 18 years) and their guardians, to collect Carboniferous fossils. Participants will be required to have proper footwear, safety goggles, rock hammer and chisel. Please note, this trip will involve climbing on steep, unstable slopes. For everyone's safety, APS Field Trip and Safety Guidelines will be strictly adhered to.

Deadline to register is April 31, 2008.

Contact Dan Quinsey, Paleo Ranger Chairperson by email: president@albertapaleo.org or by phone: (403) 247-3022. □

Attention all Dino Book Readers!

Library Notes

By Garren Dugan, APS Librarian

Wow, it's cold out this winter! The best way to stay warm in this weather is to sign out a book from the APS Library and stay inside. So, how about next meeting you visit me at my lonely table and I will help choose a great book for you to read.

Whether it's a story that will put you inside the mind of a *Velociraptor* going through great adventures, or you need a scientific manual to dust off all those cobwebs that might have accumulated over the years—whatever it may be, I have it all for you.

The best thing is that you get to sign out the book for three months! Now that's a deal. I don't just have books: those boxes you see me with at every meeting contain some of the best reading material. Inside I have bulletins from other societies across Canada, the US and even across the seas! Not only that, but if there is a specific animal you would like to look up, for example Arthropoda (trilobites), I have that too.

Now there's a new way to help you choose a book. Instead of coming to the meeting not knowing what to sign out, in the comfort of your own home you can go to the APS website, click the Library link and you will find another three links. Each link is a complete inventory of all the books and articles that I have in the library. Simply search out a book or article that interests you. Now you have a choice: you can come to the next meeting with a book in mind and search for the book and then sign it out, OR from the website, either under the "Who's Who" page or "Library" page, you can email me the title of the book you have in mind. Then, at the next meeting I will have the book(s) in my hands waiting for you to sign out. No need to search, I'll do it for you. Whatever way serves you better. Hope to see you all at the next meeting! □

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new way to
help you
choose a
book!

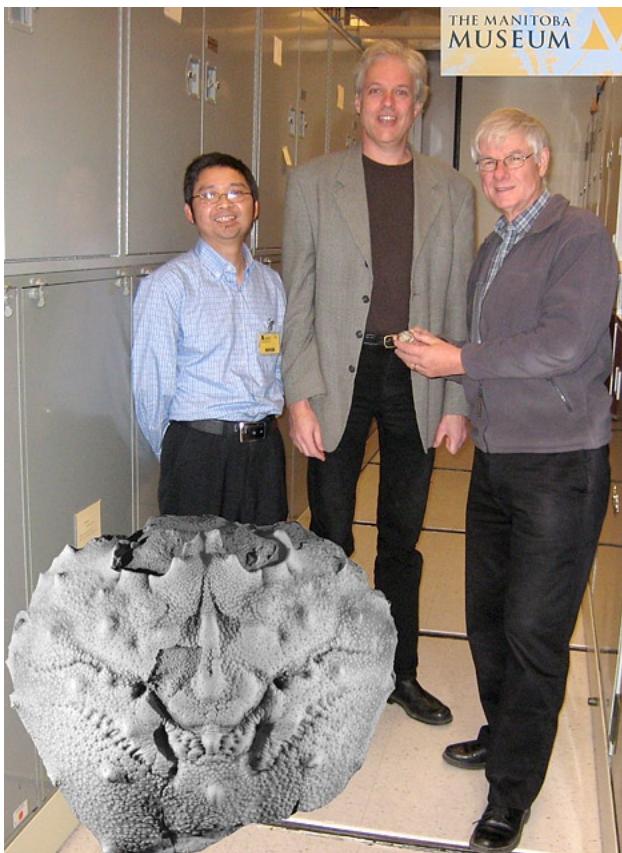
Fossils in the News

The Brandon Sun, September 15, 2007

APS member discovers important crab fossil

RUSSELL, Manitoba—APS member and retired Brandon University Education Professor **Dr. Murray Smith** has been honoured for his discovery of an important fossil crab near this southwestern Manitoba town. Dr. Smith, an amateur fossil hunter for nearly 50 years, found the specimen—preserved in three dimensions—while fossil hunting in 2006. It was found in a calcareous concretion weathered out of the Late Cretaceous (Campanian) Millwood Member of the Pierre Shale Formation.

Recognizing the rarity of the find, Dr. Smith reported his discovery to Dr. Rong Yu Li of Brandon University's Department of Geology. Dr. Li, in turn, enlisted the help of crustacean experts Drs. Rodney



Crab fossil and (l-r) Dr. Rong Yu Li (Brandon University); Dr. Graham Young (Manitoba Museum); and Dr. Murray Smith. Photo courtesy of Dr. Smith.

Feldmann and Carrie Schweitzer of Kent State University, Ohio.

The crab fossil, named *Cretacocarcinus smithi* ("Smith's Cretaceous crab") has been assigned to a new family, genus and species of crabs. It represents a "missing link" between a group of previously studied Paleocene fossils and a family of crabs that range from the Cretaceous to the present day. It is the first crab fossil reported from Manitoba.

Dr. Feldmann remarks: "Palaeontological research relies heavily on the serendipitous discoveries of new fossils and the collaboration of interested amateurs and professionals," a sentiment echoed by Dr. Smith, who points out that "it's important to acknowledge that none of this would have been possible without the respectful interaction and co-operation between amateur and professional, expertise local and international."

The crab fossil was donated by Dr. Smith to the Manitoba Museum in Winnipeg. A write-up has been published in the *Canadian Journal of Earth Sciences*, volume 44, p. 1741–1752 (2007) and may be downloaded from the Journal's web site at <http://pubs.nrc-cnrc.gc.ca/rp-ps/journalDetail.jsp?jcode=cjes&lang=eng> (follow the "previous issues" link to "Volume 44 (2007)". □

Top Fossil News Stories of 2007

By Steven Francis-Coombs

I'm sorry if I missed any stories that others feel are important. I summed most of them up and if you want to find out more, you can Google them.

Giant Penguins found

Let's start this off with the report of two species of giant penguins found in South America. Yes, giant penguins! Not just any normal penguins, no, these were the size of humans. Much bigger than any penguins found on the planet today and it turns out they didn't need any ice, either. This discovery actually pushes back the date of penguin migration to the equatorial regions more than 30 million years. As you know, penguins are adapted to a colder climate today and are susceptible to climate change, but it seems that wasn't always true. This report described

two new species. The first one lived in Peru about 36 million years ago, and would have stood about 1.5 metres (4.5 feet) tall. The other species dates to about 42 million years and was about a metre tall. The necks of the two species had different arrangements of muscles, and their beaks were 30 cm long. Now compare the sizes of these ancient species to today's second largest penguin species—the king penguin.

Dakota, the new mummified hadrosaur

The mummified remains of a 67 million year old hadrosaur, named Dakota were revealed, with much of its tissues and bones encased in an uncollapsed envelope of skin. The hadrosaur, or duck-billed dinosaur, was discovered in 1999 by Tyler Lyson on his family's North Dakota property.

Studies performed on this new find suggest that Dakota was not slow, and could have outrun a *T. rex*. They came to this conclusion when they had Dakota CT-scanned to determine how much muscle mass was packed between the bone and skin of its tail. It was later calculated that the muscle mass of its rear-end was about 25 percent greater than previously thought, and a much more muscular rear-end means more powerful legs. Even though the skin colour wasn't preserved, the skin texture remains and allows scientists to map it in 3-D to see what Dakota would have looked like. This new find will hopefully unlock many more secrets and answer questions about the overall picture of how dinosaurs lived.

Giant sea scorpion

The claw of a 390 million year old giant sea scorpion the size of a crocodile was discovered in Germany. Sea scorpions are known technically as eurypterids, which are a group of ancient arthropods, now extinct. This eurypterid is named *Jaekelopterus rhenaniae*, and would have been 2.5 m long, based on the size of its 46 cm claw. The find shows that related animals such as insects, spiders and crabs, which have external skeletons, jointed limbs and segmented bodies, once grew much larger than previously thought. This fossil represents the largest known arthropod yet.

Dino that grazed like a cow

A dinosaur with a muzzle resembling a vacuum cleaner shows that not all long necked sauropods were feasting with their heads up in trees. The new sauropod named *Nigersaurus* was a member of the diplodocid family, which includes the famous *Diplodocus*. What made this 110 million year old di-

nosaur special was its square shaped muzzle with 500 to 600 replaceable teeth that were used like scissors to shear off vegetation.

It turns out that *Nigersaurus* teeth were replaced faster than those of any other dinosaur, with some ten replacements in position behind each tooth. It likely ate soft plants such as young ferns and horse-tails. These new findings suggest that the dinosaur's head faced downward, at a right angle. With the posture of its head and unusual tooth wear, this presents a whole different lifestyle for these types of sauropods, including *Diplodocus* and other related species. These sauropods were believed before to have craned their necks up into trees to feed.

New, giant oviraptorosaur

As tall as a tyrannosaurus and measuring about 8 m in length, this new species of oviraptorosaur is the biggest of its kind. It was found in the Erlian Basin of northern China's Inner Mongolia region. The new dinosaur is aptly named *Gigantoraptor erlianensis*. It also had a beak, slender legs, and likely had feathers. This discovery of *Gigantoraptor* paints a more complicated picture of the evolutionary process for birds than previously thought. The prevailing theory is that dinosaurs became smaller as they evolved into birds, and the bigger dinosaurs had less bird-like characters.

A frog found in amber

A 25 million year old tree frog was found in ancient tree sap, which hardened like a stone. The centimeter-long tree frog was found in 2005 and bought by a collector, which was then lent to scientists for study. Only a few preserved frogs have been discovered, mostly from the Dominican Republic. The age of the fossil is 40 million years (Paleogene), about 25 million years after the age of the dinosaurs.

Mammoths to make a return from extinction?

This might sound like science fiction, but scientists are on the verge of piecing together the genomes of Neanderthals and the woolly mammoth. What is so vital to doing all of this is DNA, which encodes the thousands of genes that tell cells how to build themselves and keep working. Some researchers actually believe that cloning Neanderthals and mammoths is just around the corner; but certain types of errors appear in such ancient DNA. Scientists are reading fragments of the DNA and can only guess the rest. It's said that once the mammoth genome is mapped out, it can then be compared with its closest living relative,

the African elephant. From there they could then engineer the elephant DNA, right to point of where it matches that of a mammoth.

T. rex was a chicken

The proteins extracted from 68 million year old *T. rex* bones has added to the ever growing case that today's modern birds have evolved from the dinosaurs, such as *T. rex*. The organic remains from this *T. rex* were compared with that of chickens, and it turns out that they are similar. The proteins are the original organic material from the dinosaur's soft tissues. The preservation of these soft tissues is exceptional.

Oregon's Cretaceous Croc

The fossils of an ancient crocodilian from the Cretaceous have scientists believing that its remains were transported by geologic processes. This new fossil is the oldest crocodilian ever unearthed on the Oregon side of the Pacific. This amphibious reptile with a crocodile's body and fishes' tail is thought to be a new species within the genus *Thalattosuchia*. The animal's remains were perhaps transported eastward from Japan via continental drift. This creature had short, stubby legs, which the scientists say would have allowed it to creep easily along the ground and lay eggs, but it was also at home in the water.

Before *Triceratops* was *Eotriceratops*

In 1910 famed U.S. fossil hunter Barnum Brown was on his first expedition through Alberta when he came across the partial skeleton of a horned dinosaur, but left it there in favour of potentially better discoveries elsewhere in the badlands. It wasn't seen again until ninety years later when a group of Canadian researchers rediscovered it while working on the Horseshoe Canyon Formation in what is now Dry Island Buffalo Jump Provincial Park.

The cook on the team found a nasal horn core belonging to a ceratopsian dinosaur. The team were stumped while examining the fossil specimen. It wasn't long before they discovered that it was Barnum Brown's lost ceratopsian dinosaur. The 68 million year old dinosaur was named *Eotriceratops xerinsularis*. It is the largest type of horned dinosaur ever discovered in Alberta and perhaps the world. *Eotriceratops* would have been eight or nine metres in length. Its skull was the size of a Smart car. It is suggested that *Eotriceratops* was an early member of the well-known *Triceratops* group.

See Steven's website: www.fossils-illustrated.com □