

VERTEBRATE PALAEOLOGY FIELD COURSE

BIOL 573 2007

Course Outline

Instructors: Hans Larsson 206 Redpath Museum 398-4086 ext. 089457
hans.ce.larsson@mcgill.ca

Prerequisites: BIOL 304, BIOL 352, or permission of instructor.

Content: This course is intended for advanced undergraduate and graduate students. The primary objective for the course is to train students in collecting and analysis methods in vertebrate palaeontology. The course will take place in southwestern Saskatchewan. The rocks are Late Cretaceous (~70 to 65 million years old) and contain the famous K-T extinction boundary. There, fieldwork will be conducted for approximately 15 days. During that time, students will have practical training with fossil identification, mapping, collecting, and stratigraphic interpretation. An emphasis will be placed on terrestrial vertebrate fossils (i.e. dinosaurs, crocodiles, and other reptiles) and palaeocommunity analysis. Each student will generate an independent study project based on data collected and methods learned during the fieldwork. The project will be due before the Fall semester 2007.

Readings: Recent research articles and reviews will be on site. No textbook will be used. Presentations on selected topics will be given most evenings by the instructor.

Method: 18-day field course from May 1 to May 18, 2006. The equivalent of one full week will be spent during the summer for analysis of results, literature review, and report writing.

Evaluation: On basis of fieldwork (70%) and written report (30%).

Registration: Students must contact Prof. Larsson no later than April 20, 2007 to receive permission for the course (15 slots first come first served) and receive an instruction sheet. For non-McGill students, a McGill student number is issued upon registration for the summer semester at McGill (see below). A **course deposit of \$450 must be given to Susan Gabe before April 25, 2007** to secure a place in the course (address below). This deposit should be with a **certified cheque payable to McGill University**. This deposit will not be refundable for withdrawals after May 3. This money will cover all personal expenses such as vehicle rental, food, camp fees, and museum entrance fees, but not tuition or transportation to and from Regina. Depending on fuel costs and student enrolment, the total cost of the course is expected to be between \$450 and \$850 per student.

Travel to Regina

All students must make their own way to Val Marie, about 3 hours drive southwest of Regina, to meet at the Grasslands National Park office at 9:00 in the morning of May 1, 2007. Some students are driving from Montreal to Saskatchewan in personal vehicles. There are spaces available from some students who may want to drive out. Vehicles that drive out may also be used during the course for grocery and water supplies and partially paid for by the course. Students should coordinating the drive from Montreal to Saskatchewan and keep the instructor informed.

Course and Summer Registration

All students must be registered for the summer 2006 semester at McGill. When non-McGill students do so, they will receive a McGill student number to allow them to register for the course. Information for summer registration can be found at:

<http://www.mcgill.ca/summer/credit>

All certified cheques must be sent to:

Susan Gabe, Undergraduate coordinator
Stewart Biology Building, McGill University
1205 Docteur Penfield Ave.
Montreal, Quebec H3A 1B1
(514) 398-7045, susan.gabe@mcgill.ca

Susan Gabe can also assist in questions concerning summer registration.



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May 2007

A. Readiness Checklist:

Instructions:

Please use the following checklist to determine your readiness to depart for the Vertebrate Palaeontology Field Course. The information on this form (Section A, B, C) and the student acceptance form must be presented to Hans Larsson, Redpath Museum, no later than April 25, 2007.

NAME: _____ Home institution: _____

McGill University student ID#: _____

Contact phone number: _____

email: _____

- 1) Supplemental Medical Insurance Company & Policy # (if required):

Terms of Policy: emergency medical (how much): _____

Evacuation coverage (how much): _____

to use in case of emergency: _____

- 2) Medical examination (return form C)

- 3) List any allergies and/or medical conditions that the course instructor should be aware of:

I authorize McGill to contact the person I have named as a contact in case of emergency at their discretion.

Signature of student: _____

Person to contact: _____ Relationship to student: _____

Telephone number (including area code): _____

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B. Program Safety:

Program Safety

The course will be undertaken in a number of exciting and interesting, but potentially hazardous, environments. All participants are expected to behave in a mature and prudent manner when it comes to personal or group safety. In the field you should follow the instructions of faculty and guides/rangers explicitly! In the preliminary meetings we established guidelines of appropriate behaviour. These guidelines must be obeyed for your safety and for the safety of others. Please note that the Vertebrate Palaeontology Field Course takes place between May 1 and May 18, 2007. Here are a few specific issues that we want to bring to your attention.

1. If you suffer from any medical conditions please inform Dr. Larsson in the space provided above so that appropriate measures can be taken.
2. Please note that while you are participating in the course you should have your Medicare or equivalent card and any other medical card relating to emergency travel insurance in your possession.
3. Due to the travel time to the site, the any student wishing to withdraw from the course will full reimbursement may do so before the 4th day of the course at the field site. Withdrawal may also occur after the 4th day but before the 8th day on site but with no reimbursement.

I have read the description of the Vertebrate Palaeontology Field Course (BIOL 573) and I understand and accept that the program involves at times physically and mentally strenuous activities in a remote area far removed from hospitals. Furthermore, I understand that as a student of McGill I remain subject to the rules, regulations, and policies of McGill, including but not limited to, those contained in the Handbook of Student Rights and Responsibilities.

Applicant's name: _____
(Please print or type)

Applicant's Signature: _____ Date: _____

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D. Communication and Safety

1) Communication:

Cell phones may get reception in the camp but usually do not. Long distance phone calls can only be made during the frequent visits to nearby towns to resupply. These visits will be every two to three days. All calls must be charged to a personal calling card. A satellite phone will be in camp and used for regular check-ins with Marie LaRicca at the Redpath Museum. The phone may also be used for emergencies. Messages may be left with:

Marie LaRicca
Redpath Museum, McGill University
859 Sherbrooke St. W.
Montreal, H3A 2K6
PQ, Canada
Phone: (514) 398-4086 ext. 3188
Fax: (514) 398-3185
marie.laricca@mcgill.ca

2) Dehydration, sun, steep inclines, and snakes:

Dehydration, sunburn, and sunstroke are potential problems in the badlands of western Canada. They are essentially deserts. Summer temperatures regularly reach 40°C. This climate along with the long and strenuous hikes we will undertake requires more water intake than you may drink in Montreal. Three litres water per day is recommended. If you have a fever or diarrhoea please inform the instructor immediately and drink juice, tea with lemon and sugar or other liquids containing electrolytes. Initial signs of sunstroke will include nausea and headaches. If these symptoms appear, immediately notify someone, find some shade, rest, and hydrate with electrolytes.

The terrain can be quite steep with near vertical cliffs for many tens of metres. Be extremely cautious when in steep regions and do not take any risks during ascents and descents. All hiking must be done with at least one 'buddy' nearby. In general, the group will always be together or within eyesight and shouting distance. Each person will also be equipped with a small communications radio and emergency whistle.

All healthy wildlife in the region is harmless to humans under normal conditions. Rattlesnakes can be dangerous when provoked. Only one species, the Prairie Rattlesnake, is found in the area. They will not seek you out to bite. They will only strike when seriously provoked or accidentally stepped on. Special care should be taken to avoid contact and disturbance with these animals.

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E. Course Timeline (approximate – weather permitting for some tasks):

- May 1 Meet everyone at the Grasslands National Park office in Val Marie, SK. After an orientation by the Park officers and Park registration drive to the base camp, set up camp, and discuss camp duties (washing, cooking); discuss local maps and geology; go for a hike to explain the geology.
- May 1-2 Discuss collection techniques and field cataloguing requirements; spend rest of day prospecting in groups locally with evening identifying, minor preparation, and cataloguing all specimens collected (these evening activities will occur each night while in the field)
- May 3 discuss concept of transect sampling and establish a transect during afternoon for sampling
- May 4 finish sampling transect and continue discussion of sampling statistics
- May 5-8 establish teams of three major tasks: 1) local prospecting; 2) microsite sampling; and 3) dinosaur quarrying if a site is located
- May 9-13 rotate teams
- May 13-15 map and prospect a full-length transect
- May 16-18 travel to East End, SK and visit the T. rex Discovery Centre. While there preparation techniques will be learned in the lab and individual student projects started. This facility has electricity and students are encouraged to bring laptops to begin data analysis. We will be camping nearby.
- June discuss project details with each student via phone, office interviews, and/or email
- summer (date TBA) submit written project to Dr. Larsson

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Appendix A: Personal Effects List

Required and some recommended equipment:

1. A single large duffle bag or backpack to carry everything in (do not bring a suitcase)
2. Tent (can be a 3-season or summer tent but should have a waterproof rain fly [make sure to spray it with UV protectant if it's not UV-proof])
3. Sleeping bag (-10C bag preferably; nights can get down to near freezing)
4. Thermarest (for comfort)
5. Day pack (to carry daily water, food, note taking, and collecting supplies)
6. Water canteen (3 one-litre bottles or a dromedary bag in your pack)
7. Small toiletry kit
8. Pocket knife (Swiss Army-type or Leatherman multiplier-type)
9. Sturdy flashlight (handheld or headlamp)
10. Notebooks (for notes and illustrations), pens and pencils, journal
11. Sunglasses
12. Sunscreen & lip balm (SPF 15 or higher)
13. Insect repellent (there may be some mosquitoes and sand flies)
14. Spare prescription glasses or contacts, if required
15. Prescription medicines, if required
16. Contraceptive supplies, if required
17. Bath towel & face cloth
18. Recommended clothing (be sure that your clothing is comfortable to hike in):
 - Hiking boots – can be light hiking boots, or if you prefer a mountaineering boot
 - Camp shoes/sandals – to let your feet relax in camp and for driving
 - Shorts – one or two pairs
 - Swimsuit – we'll be close to a stream and hopefully swim most days
 - Pants and shorts – one or two pairs (for 0C to 30C weather)
 - Socks – generally a light and a thick pair worn layered for hiking and bring at least three sets
 - Undergarments – enough so that you can wash clothing only once a week
 - Shirts – cotton is OK but synthetic is better
 - A warm sweater/fleece for any cold nights
 - Rain coat and pants
 - Sun hat
19. Valid driver's licence – in case any of you may need to drive
20. Valid Medicare or equivalent card and any information regarding travel insurance
21. Wrist-watch – sometimes we'll be rendezvousing at different places in the field at determined times
22. Digital/film Camera (optional but recommended)
23. A GPS and/or compass are optional, but if you want to bring one you will certainly use it.
24. Anything else for entertainment during rainy days or spare time.

DO NOT OVERPACK! Leave some empty space to bring back souvenirs.

If you are short a few clothes, you can buy them there.

Appendix B: Course Supplied Equipment List

First Aid Kit:

1. Band-aids and sterile gauze
2. Steri-Strips
3. Elastic bandage and medical tape
4. Ibuprofen
5. Aspirin
6. Antibiotic ointment (Polysporin and iodine)
7. Blister treatments (Second Skin)
8. Burn cream (an aloe vera cream)
9. Snake bite kit (does not include anti-venom or adrenaline)
10. Safety pins
11. Scissors
12. Tweezers
13. Needle and thread
14. Antihistamine

****NOTE:** the course medical kit does not provide EpiPens. If you may require one, I recommend you bring two with you at all times.

Camp Equipment:

1. 1 large canvas wall tent for cooking and a library
2. library (with photocopies of the primary literature of nearly all known fauna and flora from the geologic horizons we'll be in)
3. stove and propane tank
4. cooking pots and utensils
5. eating utensils and dish cleaning supplies
6. ice coolers for storing some foods
7. chairs, tables
8. rope, wood saw, measuring tape
9. field microscope
10. collecting equipment:
 - safety glasses
 - rock hammers
 - crack hammers
 - chisels, awls, pick axe, shovels
 - brushes
 - collecting bags
 - specimen field data sheets
 - glues (B-72 in acetone, epoxy, and cyanoacrylide)
 - plaster and cloth (burlap) for large fossil collection

We will be camping in a National Park. There will be some electricity and water access.