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1903

Biological Station Summer Session, 1903

University of Montana (Missoula, Mont. : 1893-1913)

Flathead Lake Biological Station

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University of Montana (Missoula, Mont. : 1893-1913) and Flathead Lake Biological Station, "Biological Station Summer Session, 1903" (1903). *University of Montana Bulletin: Biological Series: Biological Station Summer Session, 1899-1974*. 5.

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Archives
Bulletin University of Montana, No. 14.
Biological Series No. 4.

University of Montana Biological Station

AT

FLATHEAD LAKE.

Post Office, Bigfork, Montana.

FIFTH ANNUAL SESSION.



A COLLECTING PARTY ON FLATHEAD LAKE.

ANNOUNCEMENT

FOR THE

SUMMER OF 1903.

University of Montana, Missoula, Montana, 1903.

Entered August 24, 1901, at Missoula, Montana, as second class matter, under act of Congress July 16, 1894.



ANNOUNCEMENT.

The Lake Laboratory or Biological Station of the University of Montana is designed to provide opportunity for investigation of the biology of the lake and mountain region, and for giving courses of instruction in botany, zoology, entomology, nature study and photography. The work is adapted to students of the University and of high schools, teachers of the state, inexperienced beginners in natural history, and original investigators. The following statements give an outline of the plans for the summer of 1903.

STAFF OF INSTRUCTORS.

Oscar J. Craig, President of the University, Lecturer.

Morton J. Elrod, Prof. of Biology, Director of the Station, Botany and Entomology.

Maurice Ricker, Principal, Burlington (Iowa) High School, Zoology, Photography.

P. M. Silloway, Principal, Fergus County Free High School, Ornithology, Nature Study.

LOCATION.

The field laboratory is located on the bank of Swan River at its outlet into Flathead Lake. This location affords a fine harbor for boats and a good camping site for the tents of those attending. The adjacent region contains forests, ponds, lakes, swamps, cultivated fields, mountains, rivers and ravines. It is rich in animal and vegetable life. The lake offers rare opportunities for collecting, and presents some beautiful scenery. East of the lake the Mission range comes abruptly to the water's edge. The range slopes from the Swan river on the north to the high peaks, ten thousand feet, at the southern end, and its scenery is wild, rugged and grand, truly Alpine in character, and rivaling the Alps in beauty and magnificence. West of the lake are the Cabinets. Near the Station Swan lake, Rost lake, Echo lake, and other waters, are easily accessible. Daphnia pond, a few minutes walk from the Station, is rich in pond life, while Estey's pond, about as far again, is fully as productive. The Swan range is easily accessible from the Station, and Alpine summits are annually visited. The scenery is very fine, and Alpine collecting is remarkably good. The Station is not difficult of access. The stage and boat rides are easy, with charming scenery constantly in view.

EQUIPMENT.

The building is a convenient out door laboratory, with tables for a dozen students. The station work has entirely outgrown the building. Many of the lectures are given out of doors in the yard. The fine summer weather permits of much laboratory work out of doors. There is a dark room for photography. There are three boats which are the property of the Station. Other boats may be had at any time. Microscopes, glassware, books and utensils will be supplied from the University. Botanical collecting and drying material will be supplied.

Students in Ornithology must supply their own guns or field glasses. Necessary ammunition will be supplied at cost. Students in Photography will furnish their own cameras and plates. The necessary chemicals for development will be supplied free. Students who live in tents will supply their own tents and bedding.

COURSES OF STUDY.

Zoology:—

(a) Laboratory and field work, including dissection or microscopic study of type forms, with field work and instruction in collecting and preserving for laboratory use and permanent collections.



MacDougal Peak, Swan Range, visited annually by parties from the station. Photo by M. J. E., August, 1902. The view is south. Alt. 7725.

(b) Field and laboratory course in entomology. Instruction in collecting, preserving and labelling insects. Dissection and study of type specimens. A study of injurious insects.

(c) Ichthyology. Special course devoted particularly to the lake and river fishes and their food supply. The course will include plankton study.

(d) Ornithology. A study of birds, with methods of collecting, making and preserving skins; habits and lives of birds of the rich avian region adjacent.

Botany:—

(a) Laboratory and field course; study of type forms. The course will consist of collecting trips in the field where common species of the different orders are found, classification of the more common species, study of structure, with methods of preservation, both dry and in liquid, for immediate and permanent use.

(b) Ecology. General course including local ecological problems and local plant geography. For this the region offers a rich field.

Photography:—

No regular course will be given in this subject, but every aid which the station can give will be given those who wish to become proficient in this art. Students in photography must supply their own plates or films and paper. There is a dark room at the laboratory and the scenery in the vicinity gives ample scope for a series of negatives either in landscape or of scientific subjects.

Nature Study:—

A course of study and practical work will be outlined which will afford both a fund of information on which to draw during school work and at the same time secure a collection of material to be used in illustration. The scope of the work will include zoology, botany, geology, and physiography of the region.

INVESTIGATION, ADVANCED COURSES, UNIVERSITY CREDITS.

It will be noticed that several of the advanced courses cover ground of University courses. Students with University standing may secure credits for work which is equivalent to University courses. Students taking elementary courses may secure preparatory credits. Elementary courses are also adapted to high school pupils or nature study teachers. The opportunities for research are exceptionally good in some lines, and every facility will be afforded persons carrying on such work. Special work will be outlined for those fitted to carry on advanced study.

METHODS OF INSTRUCTION.

The work will consist very largely of field collecting and observation, study of relation to environment supplemented by laboratory dissections and microscopic examination. The general courses will enable teachers to familiarize themselves with methods of field work, and give a store of information from which to draw in nature study subjects. The general courses also give opportunity to students and others to pursue lines of study with better facilities for out door work with fresh material, than is generally to be had in regular university work.

The expeditions are primarily to give opportunity for the study of animals and plants in their natural environment. By this means more lasting interest is aroused, and more accurate information is obtained.

LECTURES.

Almost every day a lecture on some biological topic will be given at the laboratory. In 1902 sixteen lectures were presented. These have proven very valuable and helpful, and were well attended. The following are some of those to be given the session of 1903:

Adaptation in Animal Life; The Entomostraca of Flathead Lake; Wind Movements as Observed at Swan and Flathead Lakes; The Fishes of Western Montana; The Geology and Zoology of the Mission Range of Mountains; Aquatic Life in Air-breathing Animals; Recognition of Our



Upper end of Flathead Lake, with valley, from Prospect hill. Swan river enters the lake from the right. The station is on the river bank. The tongue of land is the delta of Flathead river. Photo by M. J. E., July, '02. The view is N. W.

Native Trees; Animal Counterfeits; Our Game Birds; Nature Study in the Grades; How to Know Birds; Adaptations in Bird Life; Bird Life of Daphnia Pond; The Use of Photography in Science; The Importance of Plankton Study. Others will be added to the list. Pres. Craig will be present for a portion of the time and will give several lectures.

EXCURSIONS.

The following excursions will be taken during the session of 1903, unless the weather is unfavorable:

1. A trip to Swan Lake, through the forests, with stop over night at the lake. This is a beautiful lake in the mountains, of great interest biologically and geologically.

2. A trip to Rost Lake, at the base of the Kootenay Mountains. This is a lake almost filled up, a fine collecting field. It is an admirable location for camps.

3. An ascent of MacDougal Peak via an Indian trail, to an altitude of 7,725 feet. This will afford opportunity for alpine collecting, and will present some of the most sublime scenery in the world.

4. A trip around Flathead Lake, making study of its banks, bays, and swamps.

5. A visit to the Ryther herd of elk, where may be seen many of these noble and fast vanishing animals.

These trips will be under the personal supervision of the Director of the Station. Those taking the trips must bear a proportionate share of the expense necessary. Such trips will prove of great value and interest biologically aside from the pleasures they bring.

HOW TO REACH THE STATION.

Students via Northern Pacific will get off at Selish. Stage tri-weekly runs to Flathead Lake (35 miles), connecting with steamer Klondyke, which runs across the lake. Stage fare, one way, \$3.00, round trip, \$5.00, trunks extra. Boat fare across the lake, one way, \$3.00, round trip, \$5.00. Stage leaves Selish on Mondays, Wednesdays and Fridays, connecting with the steamer, returning the same day.

Students via Great Northern will get off at Kalispell, connecting by stage with the steamer Klondike at Demersville, a short distance from Kalispell.

BOARD AND ROOM.

Most of those at the Station, including the staff, live in tents. A few tents are for rent. Day board may be had at Sliter's hotel for \$5.00 per week. Board and room may be had at \$7.00 per week. Many prefer to do their own cooking. The stores supply all the necessaries of life, while the region affords an abundance of fruit and vegetables. Daily mail gives easy communication with the outside world. There is also telephone connection.

RECREATION.

Many will wish to combine an outing with study. Fishing near the laboratory is excellent. There are many boats besides those of the Station, and rowing may be indulged in. The field is excellent for photography. Bathing in the lake is always a treat and the beach is fine. The region has an abundance of fruit of all kinds. The hills and forests afford quiet retreats for study or for strolls. Few places have more natural attractions. At the proper season hunting is good. Deer have been seen annually a few rods from the laboratory. Grouse and pheasants abound in the hills. In season duck shooting is fine. Most of the country affords good wheeling for bicycles.

DATE OF OPENING.

The laboratory work of the Station will begin Monday, July 13, and continue five weeks, or until Saturday, August 15. For a week or more before the Station opens some one on the staff will be at or near the

Station, and will aid any who may choose to work during such time. The laboratory is at the disposal of students from June 15 to September 1st, or even later, if any wish to use it.

AFTER THE SESSION.

At the close of the work at the laboratory the station staff will carry on investigations and make collections in the vicinity, Senator Wm. A. Clark having made a contribution for this purpose. It will be possible to accommodate a few additional persons in this work. The work is severe and is not possible for many. Those accompanying must pay share of the expense. Correspondence should be held early, so as to mature plans.

EXPENSES.

The Station is a department of the University of Montana. The policy of the State Board of Education is to make all work of the University free to residents of the State. In conformity with this plan there is no tuition or laboratory fee charged. Students attending will pay for breakage. It is thus possible for students to come from remote sections of the State, spend six or eight weeks in study under the most favorable conditions, with the best facilities the State affords, at a minimum expense. Correspondence is invited. There is no similar work offered in the Northwest. Considering the difference in fees and the facilities for camp life attendance may be made with as little expense as at eastern stations from the same distance, with work in a new field, and with side trips and short expeditions such as no other station offers.

HINTS FOR THOSE CONTEMPLATING ATTENDANCE.

Avoid bringing trunks. Large trunks are very difficult to handle, and transportation is expensive. Steamer trunks are less troublesome. If possible pack outfits in rolls, covered by canvas, fastened by large and strong straps. Hand baggage of any kind is not troublesome.

Outdoor and working clothing is adopted by all. Heavy shoes are a necessity. No other kind will stand the wear, if there is to be traveling.

Those who sleep in tents must remember the nights are always cool. A cheap tick, ready to be filled, and two comforts or heavy blankets over, with whatever is desired under the individual, are necessary. These can be purchased after arrival, if this is desired and at reasonable rate. In place of the preceding a sleeping bag is both a luxury and a necessity.

Reduce baggage to a minimum in weight. Heavy weight of books is not advisable, but reading matter for leisure moments should be brought.

In matter of tents leave poles at home. There is abundance of lumber in the region.

For any further information address,

MORTON J. ELROD, Director,
Missoula, Montana.

For information concerning the University, its departments, courses of study, etc., address,

OSCAR J. CRAIG, President,
Missoula, Montana.



Daphnia Pond, near the station; a fine collecting field. Photo by M. J. E., August, 1902. The view is north.