1913

Biological Station Summer Session, 1913

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

Flathead Lake Biological Station

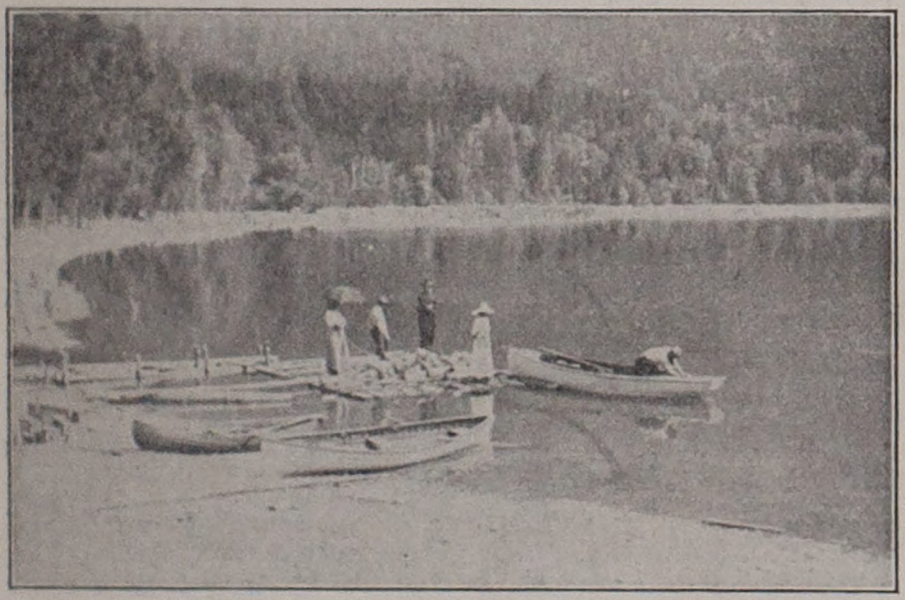
UNIVERSITY *of* MONTANA
BIOLOGICAL STATION

Yellow Bay-on-Flathead Lake

Post Office, Glen, Montana

JUNE 17 TO JULY 30, 1913

Students May Stay as Much Longer as They Desire



On the beach at the Station. Preparing for a collecting trip.

Bulletin of the University of Montana, May, 1913

(Total No. 87, Circular Series No. 33)

Summer School Course June 9 to July 18 1913	First Semester, 1913-14 Registration Day September 9, 1913

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The Biological Station building and its environment.

University of Montana Biological Station

A station for instruction and research in biology will be mainmaintained by the University of Montana for the eleventh season, as a part of its regular summer session, during the six weeks from June 17th to July 30th. Students may stay as much later as they desire.

The station is located at Yellow Bay on Flathead Lake, which is about midway on the eastern shore. At this place the University owns eighty seven acres, with nearly a mile and a half of shore line, given by act of congress. The station building is about a mile and a half from the post office Glen. The distance from Somers, the terminus of the Great Northern railroad is about twenty miles; from Bigfork at the upper end of the lake at the mouth of Swan River, seventeen miles; and from Polson, on the lower end of the lake, about sixteen miles. Connection is made from these places by boat. An automobile road is under construction along the east lake shore, and has been completed from the north end almost to the station grounds.

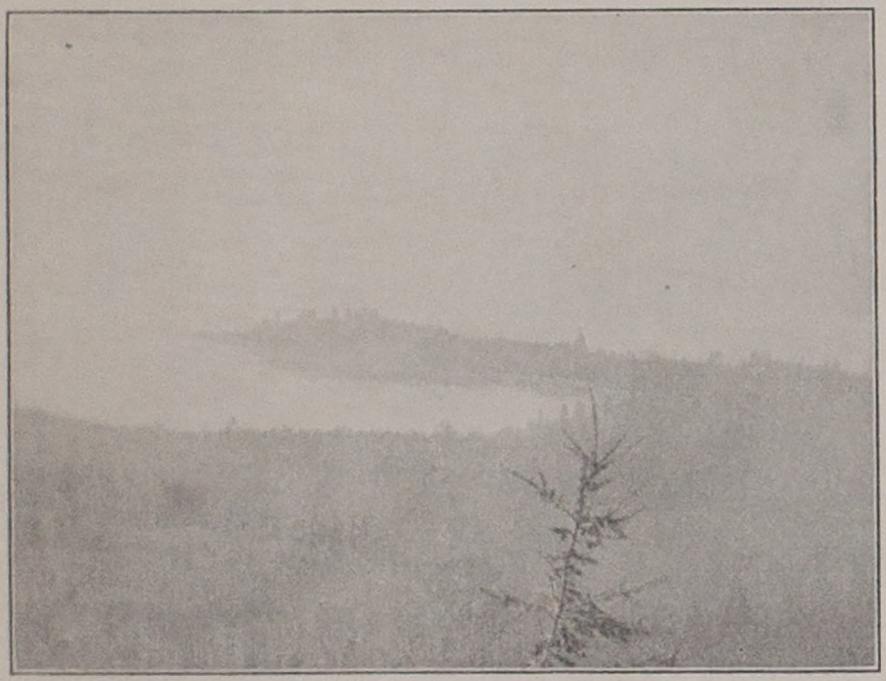
The region is a virgin forest. The Mission mountains rise almost abruptly from Flathead Lake on the east, reaching an elevation of almost 8,500 feet near the station, or a mile in verticle distance above the water. These mountains present a variety of collecting fields, from the dense woods at the lake to alpine vegetation and talus meadows. A trail has been blazed to one of the summits. By boat, it is possible to reach in a short time the swampy delta of Flathead river where it enters the lake, the swamp at the southern end of the lake, prairie country in several localities, and numerous islands. The lake itself covers more than three hundred and fifty square miles and is three hundred feet deep.

The beach at the station is fine gravel or sand. There is no dust at any time. The bay is a perfect harbor for boats, making a pleasant pastime of rowing. The beach is excellent for bathing.

Besides this tract the station has two other sites of forty acres each, one on Idlewilde Island, the other on Wild Horse Island. Both of these are used during the summer.

The topography near the station is such as to afford a variety of floral and faunal conditions. From the deep lake to high mountain top is an extreme which very few places can present. From virgin prairie to virgin forest the distance is but a few miles. Rock cliffs and talus slopes and big swamps present marked contrasts for study and collecting. In these places are many rare forms of animal and vegetable life. In such rich fields there is much pioneer work yet to be done. Bear, deer, even moose have been seen close to the station, as have the puma, lynx and other smaller animals.

Looking up the Lake, northwest, toward Somers from the point of land by the Station.



Yellow Bay from the mountain top. The Biological Station building is at the end of the bay on the right.

Building and Equipment:

The station building is a two-story brick structure, thirty by forty feet, with a cement floor below and rooms for investigators and others on the second floor. It is situated in a beautiful grove of native yellow pine and tamarack several hundred years old, is above high water mark, and commands a magnificent view in every direction. A mountain stream furnishes an abundance of pure and ice cold water.

There is a dark room for photography. A big fireplace makes the place cheerful on cool evenings.

The station has a boat thirty feet long and seven feet beam, with a twelve horsepower gasoline engine. The boat will carry fifteen people. There is a second smaller boat, sixteen feet long, with gasoline engine, a rowboat and two canvas boats. There is the usual collecting apparatus of various kinds. The fees mentioned later cover all expense connected with the use of the boats and material.

A limited number of tents are for rent to students. All persons at the station live in tents. These are provided with board

The harbor at Idlewilde Island. All of the land in the picture belongs to the Station. This is about an hour's ride from Yellow Bay.

Biological Station Boat on Flathead Lake.

floor and with the necessary items for tent life, except bedding and linen.

Plan of Work.

It is not the purpose of the station to duplicate the work offered at the University, but to provide facilities for field work of a kind that cannot be well carried on with limited hours for a schedule. Each person may select the study he wishes to pursue, and give to it all or a portion of his time. Instruction will be limited to certain courses for beginners, but qualified students may elect special work and pursue any line of investigation or study they desire. Provision will be made for both elementary and advanced study in both botany and zoology in its various fields. Credit for equivalent University work will be given to those requesting it to the amount of six hours. This requires full work for the entire six weeks.

Board and Lodging:

Tents for the use of students and the teaching staff will be pitched near the laboratory. Competent persons will be present to give supervision and advice to women. The tents are eleven by fourteen or larger, with board floors and four and one-half foot walls, straw filled bed ticks, and necessary tent material. Each tent will accommodate two persons. Students will provide their own towels and bedding. Those who prefer to do so may bring their own tents.

First class table board will be provided at the mess tent of the station. Students will not be permitted to cook their own meals.

A list of articles of clothing, bedding, and other necessaries, with instructions how to reach the station, and direction concerning registration and the payment of fees will be sent to those who are accepted:

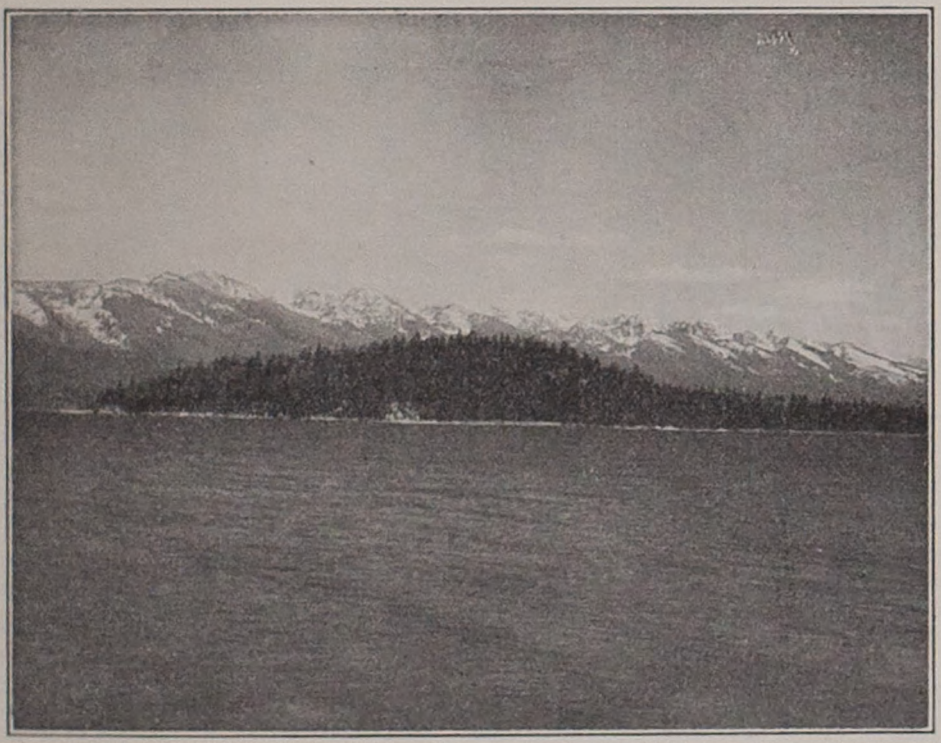
Fees and Expenses:

Students will pay the regular registration fee of ten dollars for the six weeks, and will be entitled to take courses aggregating six hours University credit. If students wish to stay later and use the building and material for further study, they may do so without further pay. A charge of five dollars is made for the use of the scientific equipment and the boats. A further charge of five dollars is made to each person occupying a tent. This charge is not increased, no matter how long the person may stay. Students may, however, provide their own camp equipment of such sort as they may choose. Board at the camp mess tent is provided at cost, which will be about six dollars per week. From nearby ranches abundance of fruit and vegetables will be provided.

Boat fare from Somers, Steamer Bigfork, is one dollar and fifty cents; from Polson, one dollar. Automobile fare from Ravalli, on the Northern Pacific railway, to Polson, thirty five miles, is three dollars and fifty cents on the regular stage, five dollars by special automobile. Special information will be given to all who expect to attend the station.

Registration:

The number to be accommodated is limited. Hence immediate registration is necessary to insure admission and accommodations. There is a limited number of tents. There are no boarding places near. It is impossible to supply and equip a large number of tents, for it is impossible to anticipate the attendance. Applications should be addressed to the Director of the Biological Station University of Montana, Missoula, Montana, and should indicate the courses the student intends to pursue, his preparation for them, and whether he will bring his own camp equipment or use that provided by the station.



Flathead Lake, Idlewilde Island and Mission Mountains in May.

Staff of Instruction:

Edwin Boone Craighead, President of the University.

Morton J. Elrod, Professor of Biology in the University of Montana, Director of the Biological Station.

J. E. Kirkwood, Professor of Botany and Forestry, University of Montana.

Charles C. Adams, Associate in Animal Ecology, University of Illinois.

Perley M. Silloway, Principal Virden High School, Virden, Ill.

Courses in Zoology:

S 1. ELEMENTARY ZOOLOGY—A course of lectures, accompanied by suitable laboratory exercises and field work intended to meet the needs of students who have no previous training in Zoology.

S 2. GENERAL ECOLOGY—A study of the animals found in the region, including their collection, classification, distribution and habits. Field work with lectures and photographic records of ecological phenomena.

S 3. ORNITHOLOGY—A study of the birds of the region, their classification, modes of identification, nesting habits, songs, distribution, with methods of making and preserving skins for future study.

S 4. ENTOMOLOGY—By lectures, book references and field work a fairly comprehensive study of the insects will be given, including representatives of the various orders. Attention will be given to forest insects.

S 5. PLANKTON—In this course will be given a systematic and ecological study of the organisms of Flathead Lake.

Courses in Botany:

S 6. ELEMENTARY BOTANY—An introduction to the study of plants, presented by lectures and field work adapted to the needs of students who have had no previous training and who wish to pursue the study for its own sake or for credit.

S 8. SYSTEMATIC BOTANY—Opportunity will be provided for study of the local flora from a systematic standpoint. This work will be conducted with special reference to particular plant groups, as the interests of students may dictate. Some attention will be given to methods of collecting and preserving specimens.

S 7. FOREST BOTANY—This will include the identification of trees and shrubs, a study of the forest flora in its various aspects, distribution with respect to both moisture and altitude, the succession of timber growths, parasitic and other forest enemies, and the like, from lectures and field work.

RESEARCH—Advanced students wishing to engage in research work in botany or zoology will be given problems for investigation to be conducted under the direction of the several members of the staff.

NATURE STUDY—While no definite course will be outlined, those desiring it will be given help and instruction in collecting and preparing material for use in any grade of work and will be given methods of study in connection with such material.

PHOTOGRAPHY—Those desiring help will be given instruction in the use of both plates and films, in exposing, developing and printing. Those who know little of the subject and those who may be more proficient will alike profit from the experience and help at their disposal. It is expected that students will furnish their own cameras, with plates or films and paper.

PHYSIOGRAPHY—High school teachers and pupils, and others will be aided in methods of study of the earth's surface by lectures and field work. Mountain formation and erosion, glacial action, river deposit, lake beaches, stream erosion, the causes producing forest and prairie, and many other phenomena, may be illustrated and studied in the region about the station.

Excursions:

Frequent excursions to various parts of the lake and to the mountains will be made. Such trips will be to points of scientific and scenic interest, which are abundant. Excursions to nearby places by boat or on foot will be of almost daily occurrence. Camping trips will be arranged during which informal instruction in camping and woodcraft will be given.

Lectures:

In addition to the lectures to be given in connection with the various courses popular evening lectures will be presented in the laboratory for all who are present. There will be two or more each week, given by members of the staff and others who may be invited. These lectures have in the past been very popular. Some of them have been published in a bulletin.

Recreation:

It is possible to do full work, sleep all the time that is needed, and still have an abundance of time for recreation. But recreation will not be permitted to interfere with the regular work to be done. Boating, fishing, swimming, forest rambling, and mountain climbing may be indulged in to the heart's content. The location of the station is in the midst of a mountain and forest wilderness, extending for miles. It is possible to combine with study the pleasures of a summer outing, which will invigorate the jaded teacher, student or others of sedentary occupation, and return them to work in the fall with renewed vigor, a stock of rich experiences and a wealth of information which money cannot buy and which no one can take away. Many testimonials could be given of the great gain in health, knowledge and practical experience from such a summer, as much as is possible in regular university attendance.

The field adjacent to the laboratory presents exceptional facilities for both elementary and advanced study. Taxonomic work in both botany and zoology can be pursued with good results, and with a strong probability of finding new species. Ecological studies may be carried on in many directions. The large lake, with forests on either side and prairie at the ends, makes a peculiar environment, the study of which has had little attention. Whitford, in 1903, made a comprehensive study of a section at the upper end of the lake under the title "The Forests of Flathead Valley." Jones, more recently, made a botanical survey of the lake shore, determining the origin of the flora. MacDougal, prior to Whitford, made collections of plants throughout the length of the Mission Range. Collections have been made annually, but the application of ecological methods of study to the life of the region has been attempted in but a few instances.

The Station Building.

How to Reach the Station:

Those coming over the Northern Pacific railroad should get off at Ravalli. Daily automobile stage and private automobiles run to Polson, thirty-five miles. The boat Bigfork will carry passengers to the station. Those coming over the Great Northern railroad will change at Columbia Falls. A branch line, with connections with all trains, runs to Kalispell and Somers, the latter on Flathead Lake. Steamer Bigfork will carry passengers to the station.

Further information and suggestions about railroad tickets and prices will be given on application. Address Morton J. Elrod, Director, Missoula, Montana.

The postoffice near the station is Glen. Mail is received from Kalispell twice a week. Mail may be addressed to Polson, received daily. Telephone and telegraph stations at Polson and at Somers. Express and freight to Somers.