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Flathead Lake Biological Station

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### Biological Station Summer Session, 1899

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

Flathead Lake Biological Station

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# UNIVERSITY OF MONTANA

SUMMER SCHOOL OF SCIENCE

AND

FIRST SUMMER OPENING

OF THE

\*\*\* MONTANA BIOLOGICAL STATION \*\*\*

TO BE HELD AT

Flathead Lake, July 17 to August 12th, 1899.



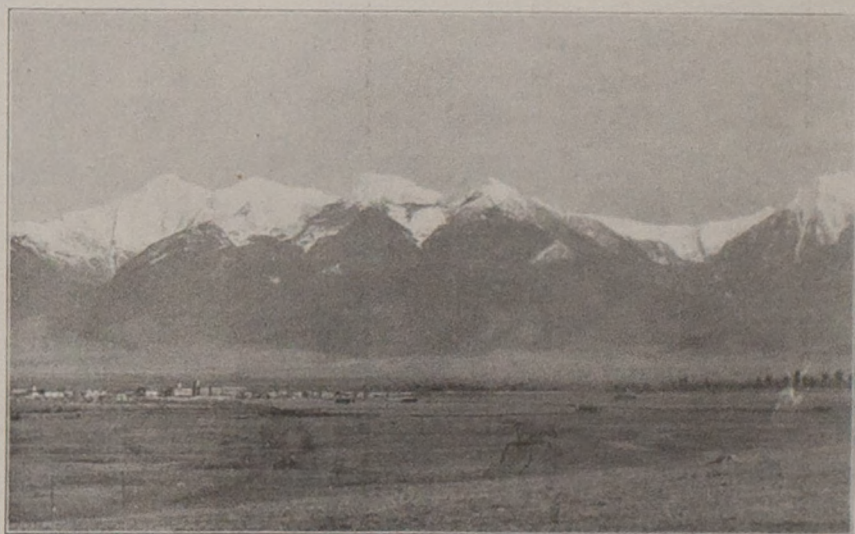
*Lower End of Flathead Lake, Showing Islands in the Distance.*

PHOTO BY CHAS. EMSLEY

The summer school of science and biological station will be opened for the purpose of extending some of the privileges of the university to the public school teachers of the state and to such others as choose to do some work in biological lines, and to make a beginning of the study of the life of the state. The state is rich in resources that are practically untouched. There are many who desire such an opportunity as the summer school and station will offer, and who cannot afford a trip to eastern summer schools of science. While the station is not started on an ex-

tensive scale it will nevertheless give opportunities which will produce rich results, opportunities for work in a new country, in a remote field, with exceedingly varied natural surroundings.

The location of the station at Flathead Lake is ideal. The lake is thirty-two miles long, and at its widest part fifteen miles wide. A steamer runs from Demersville on the north to the foot of the lake on the south three times a week. The altitude is about 4,000 feet. Flathead and Swan rivers flow into the lake from the north, the Pend Ô'Reille flows out of the southern arm. Numerous creeks, arms of the lake, swamps, forests, and valleys are close to the station, which is on the northern shore, offering abundant opportunity for littoral, land and aerial faunas. Flanking it all the Mission mountains, with snow clad



*Mission Mountains—Mission in the Foreground.*

summits and living glaciers, the home of the goat and the sheep, extend the entire length of the lake and valley. The Mission mountains have become famous for their beautiful scenery, charming Alpine lakes, rugged and jagged peaks, and beautiful falls. The field as a collecting field is new, a few dredgings having been made by Forbes in 1892 and some land collecting by the members of the University. The lake formerly undoubtedly occupied a much larger area and offers a good field for geological study. In the Mission valley is to be found the largest buffalo herd in America, which is in the care of a herder and approachable. The anthropologist may have an excellent opportunity of studying the Indians in their native haunts.

The facilities of the station are ample for a beginning in work. A gasoline launch, carrying eight persons, at a speed of five to seven miles an hour, is the property of the station, through donations by friends. Nets and dredges for taking the life of the lake, nets for insects, microscopes, chemicals, necessary books and other material for the laboratory, and a dark room for photography, will be provided. Students will be expected to furnish their own cameras, plates and printing paper, but necessary chemicals will be provided. Students in ornithology will furnish their own guns and ammunition.

For the general object, organization, and management of the station and school, the director, Professor Morton J. Elrod, is responsible. Supt. James M. Hamilton, of the Missoula public schools, will supervise the nature study work. Prof. Frederick C. Scheuch, of the modern language department of the University, will have charge of the work in photography. Fred D. Smith, professor of chemistry and geology in the University, will direct the work in hydrography, preparing the contour map of the lake, and work of like nature, and the work in geology. Mr. Earl Douglas, a graduate student, who has collected fossils in Montana for several years, will collect in the lake bed deposits adjacent to the station, and will assist any one who may wish to collect in this line. The director will have charge of the plankton collectings in the lake, will give instructions in collecting and preserving specimens, and supervise and direct the work in the laboratory.

The work offered will be as follows. Teachers in High Schools or in Nature Study will be given such lines as will enable them to collect and preserve material, working it up in the laboratory. A contour map of a portion of the lake will be made, extending it each year. Instruction will be given in photography, with special reference to its use as a scientific aid for study. Opportunity will be given for geological, palaeontological, and anthropological study.

A few tables will be set apart for investigators, supplied with microscopes and the usual stains and reagents, except the expensive, as osmic acid. A number of microscopes will be supplied for use in the general work. Every opportunity and facility will be given students attending to make and prepare collections of specimens in any quantity, either for their own use or, if teachers, for the use of their classes.

Membership at the station will be limited to twenty-five. Those desiring to attend should make early application, stating the work they wish to pursue, their fitness for doing the work, and the number of weeks they can spend at the station. Other things being equal, preference will be given to teachers and students of biology in schools and col-

leges and to investigators. For any further information address Prof. Morton J. Elrod, Missoula, Montana.

The station is located at the outlet of Swan river, close to the Flat-head Club House grounds, near the residence of Mr. E. L. Sliter. A suitable house will be built for a laboratory on the bank of the river, a few rods from the lake. It is a good spot for camp, with an excellent spring, beautiful woods, romantic scenery, and good fishing. The station may be reached via Northern Pacific to Selish (Ravalli), stage to the foot of the Lake, Polson P. O. Distance from Selish to Polson thirty-three miles, round trip \$4.00. Steamer across the lake, distance thirty-two miles, round trip \$4.00. Students via the Great Northern will get off at Kalispell, take stage to Demersville, (50 cents) steamer to the station at



*Mission Mountains after a Storm—Crow Creek in the Foreground.*

the head of the lake. Steamer runs from Kalispell to Polson and return Monday, Wednesday and Friday of each week. Students via Northern Pacific should, if possible, reach the foot of the lake on Friday or Saturday, before the station opens, where they will be met by the station and club house launches. Stage will be at Selish to take them on those days. At other times they will arrive at Selish on Sunday, Tuesday or Thursday, thus connecting with the steamer by stage. The post office where mail will be received for the station is Holt.

Material for actual use, except as before mentioned, will be provided free of charge. Attending students will be charged for material consumed, for breakage, and for the necessary expenses such as hired help, gasoline, etc. We are indebted to kind friends of education for funds



*Rapids in the Pend d'Oreille River, near the Lake Outlet—From Photograph by M. J. Elrod.*

necessary to secure the launch, material, land and laboratory. Students may adopt one of three plans. They may take tents and do their own cooking, in regular camp style; or they may tent and take meals; or they may secure meals and lodging, which may be had at \$5.00 per week. Camping at this season will be a delight. The nights are cool and pleasant, the days warm. Rains seldom occur. Those not wishing to attend the entire time should state when and how long they may wish to attend.

The station and school will be opened for work Monday, July 17th, and continue four weeks. If desired arrangements may be made for continuing work two weeks longer. This is certainly a good opportunity for studying, collecting, and camping, combined, with very moderate expense, under the best guidance and with the best facilities the state can afford.

It is not necessary to enlarge upon the importance of the work undertaken at the summer school and station. Work in botany, geology, entomology, and allied subjects, is not very extensive in the schools of the state. The summer school and station hopes to make such work more interesting, more valuable, and more helpful, and should command the hearty support of every high school in the state. The lake on which the station is located is the largest in the northwest, having between 200 and 300 square miles area of surface. Its depth, volume, and life are practically unknown, as are also its possibilities as a fish producing lake. To discover some of these unknown things is a part of the mission of the station. The geology of the lake, its history, its former size, its present topography, offer rich fields for study. A few miles from the station are Swan Lake, Mud Lake, Echo Lake, Paradise Lake, and others, all heretofore unknown, save in location, are to be reached. There are dense forests for miles. Two miles from the station are the remains of working of beaver. Insects abound. Wild game may be studied the year round. A short distance and the forest reserve offers a seclusion and a chance for study of timber equaled in few places and excelled by none.

There is every reason why students in the state should give their presence and their aid at the station, and take advantage of the liberality kind friends have shown. It is not essential that those attending should have taken instruction in the lines of work offered, though it will be more advantageous to the student to continue work than to begin it. The facilities of the station are offered to any one who may choose to attend, and the services of those having charge of the different lines of work are given gratuitously.



*A Portion of America's Largest Buffalo Herd—Copyrighted. By Permission of Chas. Emsley.*



For various reasons beyond control this circular has been delayed much beyond the time we had hoped to have it before the public. It is imperative, therefore, that those contemplating attendance should make known their desires at once, so that enough material may be taken to supply all with sufficient for work.

Copies of this circular, which is well worth preserving on account of the illustrations, will be sent to any address so long as they last.

### THE UNIVERSITY OF MONTANA.

Will open for the year 1899-1900 September 13, and offers the following courses of study:

1. A scientific course leading to the degree B. S.
2. A classical course leading to the degree B. A.
3. A philosophical course leading to the degree Ph. B.
4. A course in mechanical engineering leading to the degree B. M. E.
5. A course in pedagogy.
6. The preparatory department of the University.

During the past year two new buildings have been erected, giving ample room and facility for work. Catalogue giving full information will be sent free to any address.

Address,

OSCAR J. CRAIG, President,

Missoula, Montana.