

Botany as a Part of the Program of a Summer School Camp

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Under the direction of the Wheaton College Summer School a field station was established in the Black Hills of South Dakota in 1935 for the study of Botany and Geology. The exact location is thirteen miles west of Rapid City, in Rapid Creek Canyon at an elevation of about 4,000 feet.

The term requires four full weeks in camp in addition to the time required in transit. It covers the last four weeks of the Summer Session in Wheaton College and extends from about the middle of July to the middle of August. Full college credit is given for the work done.

We have preferred to travel by private cars as they furnish an economical means of taking short side trips for observation and collection of material with small groups while in camp. We have been successful in securing cars from students who were willing to carry passengers who share the expense for gas, oil and incidentals such as tire repairs, etc. The Director of the expedition collects a transportation deposit fee and pays the bills for all the cars. Of course the cars must be in good condition at the start. A mimeograph sheet of the itinerary is given out and the cars are supposed to keep together as nearly as possible and all must meet at certain points indicated as observation points. The college furnishes a light truck for excess baggage and the equipment for study, such as microscopes, plant presses, reference books and other necessary material.

The nature of the courses that can be successfully given is, of course, limited. Elementary courses in Taxonomy and Ecology have proved successful and special problems or advanced field courses for upper classmen. The Black Hills region is well adapted for studies in Forestry also. The work begins as soon as we leave Wheaton. Each student is given a mimeographed sheet of instructions and suggestions for study in the courses he has selected and is expected to keep accurate notes on the studies made.

It is possible that a better understanding of the function of the expedition may be had by first considering briefly the purpose back of laboratory and field work. There is, regrettably, too often a wide gap between the acquisition of knowledge in the form of facts presented in the text-book and the application of these facts as they occur in nature.

In an endeavor to bridge this gap courses in Biological sciences are divided into periods for laboratory study and periods for lectures. The materials used in the laboratory during the school year proper are, of necessity, only sample specimens that have been brought in from the field for the student's convenience. It is not contended that laboratory work does not benefit the student by helping to fix in his mind the facts of the subject, but the practical value received by actual contact with the materials, in situ, is of first importance. This greater purpose is most completely achieved when the student can be placed in direct association with the materials of study as they exist in their individual habitats. When this is possible the aforementioned "gap" between the theoretical and the practical no longer

exists—the two being united in the field in an effective working knowledge of the subject in question.

A most excellent opportunity for reconnaissance study in Ecology is offered in the journey from Wheaton to our Camp in the Black Hills. On leaving Wheaton we pass through the deciduous forest area of Northern Illinois and North Central Iowa climbing gradually to the level of the rolling lands of Northwestern Iowa, now a region of beautiful farms but formerly "high grass" prairie that extended as far west as the Missouri River. West of the Missouri River the "short grass" region of the western plains is found. This region extends to the Black Hills where the student is brought in contact with the conifer forests and flora peculiar to that region.

As the Botany and Geology departments are associated together in the expedition the intimacy and cooperation of the two departments in the field make it possible for the student to correlate the available facts to an extent not otherwise possible.

The first stop for observation is made at the White Pine Forest State Park, of Illinois. Here is being conserved one of the southernmost stands of virgin White Pine that suggests many questions of interest and importance. The Park also offers abundant flora to stimulate interest in taxonomy.

We reach Palisade State Park about lunch time and after a short survey, proceed westward across Iowa and eastern South Dakota, observing the changes in vegetation that were spoken of above. The Missouri River is crossed at Chamberlain where the expedition spends the last night out on the trip. The next observation stop is the Bad Lands of South Dakota. While there the taxonomy students collect as many specimens as possible for later identification. The ecologist and geologist find much of interest also.

It takes the better part of three days to complete the trip. On arriving at camp we find that the Commissary has preceded us and after depositing our suit cases in our rooms, and taking a plunge in the clear, cool pool formed by Rapid Creek which runs through the camp grounds, dinner is served.

We are comfortably housed in suitable buildings on the grounds. The schedule of classes and the program for the stay in camp has already been made out and class work begins immediately. Aside from short side-trips by class groups one day each week is set aside for the entire camp to visit such places of interest as the State School of Mines at Rapid City; the Homestake Gold Mine at Lead City; Crystal Cave and the Historic City of Deadwood; the famous Rushmore Mountain; Rushmore Cave and Harney Peak.

Aside from the regular work done in the elementary courses of Taxonomy and Ecology advanced students have made critical studies of the plants of certain regions in the Hills. One student made a key for the identification of the families based upon the vegetative characteristics of the plants of Rapid Canyon. An ecological study from the standpoint of floristics was worked out for a given area; photographs of species in their natural habitats supplementing all the work.

The Expedition is very fortunate in having quite a complete photographic equipment. Two Retinas using 35 mm. film are kept loaded one with black and white and the other with Kodachrome. The positives are made up into slides for classroom use. For other types of "stills" the Graflex or Recomar-33 is used. The moving picture equipment consists of a Bell & Howell Filmo 70-D, 16 mm., with its seven film speed, critical finder and 4 and 6 in. telephoto lenses and an Eastman, 16 mm. Magazine Pack. Adding to the Department Herbarium is an important feature of the work and we are working toward a complete collection of the flora of that region. We have been very kindly received by the city of Rapid City and the State School of Mines renders us every service possible.