

THE MONTANA ACADEMY OF SCIENCES

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The Montana Academy of Sciences as now organized is only four years old. The first Academy was formed in 1902 under the name of the Montana Academy of Science, Arts and Letters. From all available sources, the history of this first academy was somewhat as follows: It met for the first time in Bozeman, Montana, and at that meeting elected Dr. M. J. Elrod, Professor of Biology, Montana State University, President. The attendance at this first meeting was 58, a remarkable number when we remember the conditions of travel as they existed at that time. According to the report in "Science" for 1903, six papers were presented in full and four were read by title. These included papers on biological and physical science subjects and one on philosophy. Dr. J. P. Rowe, Professor of Geology, Montana State University, acted as secretary at this first meeting. From the sources at hand, it appears that that Academy continued to meet yearly until 1906. At that time it seems to have been discontinued and was never re-established.

During 1937 Dr. H. B. Mills of Montana State College, and the writer several times discussed the advisability of trying to establish an Academy of Sciences in the state and eventually interested others in the idea. In the fall of 1938 Dr. Mills, Dr. R. T. Clark and Dr. I. Thirkelsen of the State College, Dr. George Shue, and Dr. F. M. Thompson of the State School of Mines, and Dr. J. W. Howard, Dr. E. M. Little, Prof. J. H. Ramskill, and the writer of the State University, met at the State School of Mines in Butte to discuss in greater detail the formation of an Academy of Science. This group was of the opinion that there was a definite need in the state for an academy and that it would serve many purposes. In a state the size of Montana with the diverse problems which the state has by virtue of its climate and topography, it was thought that an academy could act as a clearing house for scientific work in

the state. It would also make possible a better understanding of the problems in the various regions of Montana on the part of those engaged in scientific work. Likewise, because of our isolation from the centers in which national scientific organizations meet, it was thought that there was a definite need for men engaged in scientific pursuit to have the benefit of discussing with others in their fields problems of mutual interest. Following this meeting those engaged in scientific work in the state were circularized. There was found to be a considerable number of persons interested in the idea of an academy.

Finally in the fall of 1940, the organization meeting of the Academy of Sciences was held in Great Falls, Montana. At this meeting 30 scientists from various parts of the state met, four papers were presented and a constitution and by-laws were drawn up. Officers for the coming year were elected as follows: President: Dr. G. B. Castle of the State University; Vice Presidents: Dr. H. B. Mills of the State College, Dr. E. W. Schilling of the State College, and Prof. Melvin S. Morris of the State University; Secretary: Dr. Fred Barkley of the State University; Treasurer: Dr. R. T. Clark of the State College. During the ensuing year our membership grew to approximately 150. There was no active membership drive, but people who were thought to be interested were informed of the objectives of the Academy and were invited to join. Our first annual meeting held in Bozeman in 1941 had a good attendance with the presentation of 43 papers. Since Pearl Harbor our meetings have been less well attended because of the difficulties of transportation and because many of the members are participating in war activities. The membership at present is in the neighborhood of 100 and with this nucleus it is hoped that the Academy can carry through and, after the war, go ahead with its program. At present the organization embraces only the sciences.

It is to be hoped that in time other sections in the Arts and Letters will be added to the scientific group and thereby contribute further in disseminating information concerning the state as a whole. The Greater University of Montana has aided the Academy in publishing its transactions. This financial assistance has been greatly appreciated by the members of the Academy since it has assured publication being continued during the war years. The plans for future meetings are tentative but it is hoped that continuity can be maintained for the duration. The present officers of the Academy are: President: Dr. D. Q. Posin, Montana School of Mines; Vice President: Dr. Harold Chatland, Montana State University, Dr. J. J. Livers and Dr. Ellsworth Hastings,

Montana State College; Secretary-Treasurer: Prof. Melvin S. Morris, Montana State University.

The Academy of Sciences in Montana will foster interest in regional and national scientific organizations. As the benefits of the state organization become apparent, members will see the opportunity for securing further stimulus and understanding in other scientific groups. State academies can act as clearing houses for problems of their individual states. Those problems which are of regional interest may then be taken to meetings of the Northwest Scientific Association. Many members of the Montana Academy of Sciences are at present members of the Northwest Scientific Association and participate in their meetings and organization.

PRINCIPLES OF FUEL REDUCTION

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All foresters, ecologists, botanists, and wildlife experts in the northern Rocky Mountain region are familiar with the tangles of snags, windfalls, and other forest debris covering small patches to large portions of our forests or wildland area. Created by past forest fires, by insect epidemics, disease, and sometimes by logging, these concentrations of fuel for future forest fires not only constitute a perpetual fire menace but also interfere with the future productivity and best use of lands.

Fire protection costs are increased through the necessity of maintaining fire lookouts, smokechasers, firefighting crews, and roads and trails in the vicinity of such bad fuel areas. Firefighting costs are greatly increased due to the extreme difficulties of fire suppression when lightning or man starts a blaze within these bad fuels. The possibility of maturing the young trees which regenerate on such areas is greatly diminished. The safety of all surrounding timber is decreased. Neither livestock nor wildlife can fully utilize the forage within such tangles of windfalls. And the hunter, the fisherman, or the mountaineer attempting to cross such an area

is seriously impeded in his or her enjoyment. Analysis of methods, costs, and benefits is likely to show that removal and the breaking up of bad snag patches and concentrations of dead ground fuels is the most economical means of correcting these unfavorable conditions.

POST-WAR OPPORTUNITY

Removal or reduction of these bad fuels, which are actually much more than a fire menace, should prove to be one productive and beneficial use of post-war labor. Tens of thousands of acres will probably need the work of hundreds of thousands of man-days. But the selection of the areas to be worked on and the character of the work to be done on each area cannot be left to the personal judgment of each local ranger, supervisor, county commissioner, state officer, or work relief official. There are too many beneficial projects awaiting work to permit the chance of wasteful "leaf-raking."

To establish the criteria which should be used, first in selecting areas worthy of post-war work and second in accomplishing the desired objectives with a minimum amount of work, the North-