

items required by the army and navy in war times are technical in nature and would ordinarily not be thought of by the casual observer. Such an item is optical glass, which is used in telescopes and instruments that serve in the direction and control of firing large and small guns and in engineering and surveying operations. The artilleryman without fire-control instruments can accomplish little; the submarine without its periscope is of small value; the airplane without a camera can make no maps of the enemy's country. Therefore, optical glass is very essential in military instruments of different types.

The optical glass problem in this country has been solved and there is now available manufacturing capacity for optical glass sufficient to supply the Army and Navy; but the skilled labor necessary to work up this glass into lenses and prisms, and to assemble these into finished instruments is not adequate. This situation is so serious that unless steps are taken to provide this labor the soldiers and sailors will be only partially equipped with necessary fire-control instruments.

To meet this situation the Ordnance Department of the Army is establishing in Rochester, N. Y., a training school for operatives on precision optics. The school is to be located at the Mechanics Institute, in Rochester, and the large optical manufacturing firms in Rochester are providing instructors and aiding in the installation of the necessary grinding, polishing, and centering apparatus.

Courses in the different branches of this industry will be given and extended over a period of six weeks. A living wage will be paid to those who take these courses. On completion of the course the student will be in a position to enter one of the optical munition factories and be competent to perform certain of the operations required.

Work of this kind on the grinding, polishing, centering, assembly, and inspection of lenses and prisms for optical systems is not heavy, and is well suited for young women who desire to do their share on war-munitions work. Many young women in this country have been knitting and doing such other work

as they are able to do to aid our soldiers and sailors, but have desired an opportunity for more responsible work. Not every woman can become a nurse, and there are still great numbers of young women whose energies are not fully utilized and who are not doing their bit toward winning the war. A good opportunity to do this is afforded by the optical training school at Rochester. Work in optical munitions is most urgent and is of highly responsible character. Optical munition workers are well paid and are contributing directly to American success in this war.

In England two training schools of this nature were established some time ago and have proved most successful. As a result, the manufacture of optical munitions in England is well in hand, and many of the responsible positions are held by young women, not formerly employed, who are serving their country most effectively in this capacity.

Details regarding the courses of instruction can be obtained from Dr. Barker, president of the Mechanics Institute, Rochester, N. Y. The largest factories are located in Rochester, Buffalo, and New York, N. Y.; Boston and Southbridge, Mass.; Pittsburgh, Pa., and Dayton, Ohio.

SUMMER WORK AT THE LABORATORIES OF THE BUREAU OF FISHERIES

Work at the Fairport laboratory is proceeding with the least possible interruption this summer. Through the cooperation of the permanent employees of the station arrangements for working quarters and living accommodations for a limited number of investigators have been made. Professors C. B. Wilson, Emmeline Moore, and H. S. Davis continue investigations of aquatic insects, plants, and protozoan parasites of fishes, respectively, in relation to fish culture in ponds.

Dr. Albert Mann, of the Bureau of Plant Industry, has been detailed by the Secretary of Agriculture, at the request of the Secretary of Commerce, for special work on the diatom flora of the Woods Hole region. Portions of the laboratory of the Woods Hole station are in the possession of the Navy Department, but laboratory facilities are available for a limited

number of investigators. Superintendent W. H. Thomas has been designated acting director of the laboratory for the season. Dr. George T. Moore, of the Missouri Botanical Garden, assisted by F. B. Dieuaide, will conduct experiments on the production and utilization of algin. Professor Edwin Linton, of Washington and Jefferson College, will continue investigations of the parasites of fishes and the food of flounders and other fishes.

The Beaufort laboratory having been turned over to the Navy Department, no work will be done there this summer.

THE AMERICAN INSTITUTE OF MINING ENGINEERS

IN an effort to increase the scope of their war service, the American Institute of Mining Engineers will meet in Colorado during the week of September 2, to take up vital problems of immediate importance. Mining engineers from every section of the country will attend. During the meeting, trips are to be made from Colorado Springs to the Cripple Creek district, Pueblo, the Leadville district and Boulder. The week's session will open in Denver on the second of September, and will that evening move to Colorado Springs, which will be the principal headquarters for the duration of the meeting.

This is the first meeting of the entire institute in Colorado since 1896, and an appropriate entertainment program is being planned by the several hundred Colorado members. One of the special features of the entertainment will be an auto drive to the top of Pikes Peak. The sections of Colorado to be visited are rich in many war minerals of importance including ferro alloys, radium, molybdenite ores and pyrites.

Those who are directing the plans for the Colorado meeting are as follows: Committee in charge, Spencer Penrose, chairman, A. E. Carlton, chairman finance committee, George M. Taylor, vice-chairman, J. Dawson Hawkins, secretary. Denver Committees: (Arrangement) Dave G. Miller, Frank Bulkley, Geo. E. Collins; (Entertainment) F. H. Bostwick, F. E. Shepard, Howland Bancroft, B. P.

Morse, J. G. Perry; (Finance) T. B. Stearns, Richard A. Parker, T. B. Burbidge.

THIRD SUMMER MEETING OF THE MATHEMATICAL ASSOCIATION OF AMERICA

It is announced in the *American Mathematical Monthly* that the third summer meeting of the Association will be held by invitation of Dartmouth College at Hanover, New Hampshire, on Friday and Saturday, September 6-7, 1918, in conjunction with, and following, the summer meeting of the American Mathematical Society. A joint dinner will be arranged for Thursday evening, September 5, and at a joint session on Friday morning the subject of the mathematics of warfare is to be treated by men now actively engaged in government service.

During the sessions of the association on Friday and Saturday, Professor Florian Cajori, of the University of California, will deliver his address, as retiring president, on "Plans for a History of Mathematics in the Nineteenth Century"; Professor W. F. Osgood, of Harvard University, will speak "On the Mathematical Formulation of Physical Concepts and Laws as treated in the Calculus"; and Professor F. L. Kennedy, of Harvard University, will give a paper on "Some Experiments in the Teaching of Descriptive Geometry," the discussion being led by Dean O. E. Randall, of Brown University. Other features of the association's program will be announced later.

For a session on Friday members are invited to submit papers on topics of their own choosing. Abstracts of such papers in a form suitable for publication in the Secretary's report of the meeting should be sent to Professor R. C. Archibald, Brown University, chairman of the program committee, not later than August first, in order to be approved by the committee in time for publication in the printed program; authors will please state the time necessary for reading their papers. No other announcement will be made until the program is mailed to members about the middle of August.

The committee on arrangements, Professor J. W. Young, chairman, announces that Dartmouth College will open one of its dormitories for the accommodation of attending members.