

CO-OPERATIVE RESEARCH WORK.

Several of the United States Universities, imitating somewhat the German Universities and the Modern Science Universities of England in obtaining the co-operation of Manufacturers have accomplished a great work in Research. A few examples of these are well worth our attention.

1. THE MASSACHUSETTS SCHOOL OF TECHNOLOGY.

This remarkable Institution, of University rank, has a world-wide fame. In 1911 it celebrated the jubilee of its founder, Dr. Rogers. It does a great work in Research. While in this field individual members of its staff have gained fame, the Institution aims rather at developing "Departmental Research," i.e. Research carried on by the joint work of individuals of the Department. Dozens of intricate problems, and this frequently at the expense of large manufacturers, have been dealt with by its departments. Problems in 1, Naval construction and architecture; 2, in Electrical Engineering, have been solved. Perhaps most remarkable as showing its policy of taking up practical questions as they arise has been. 3. The problem of Public Health. Seven volumes of past researches have been printed as Contributions from the Sanitary Research Laboratory and Sewage Experiment Station. 4. Most notable is the work of the Physical Chemistry Laboratories. Ten members make up the staff. The Research staff is organized as made up of professors, associate professors, and assistant professors. The associates and Assistants do not teach, but deal only with practical work. Research Conferences are held by the whole staff every week of the Session. A vast amount of work is done, and the enormous sums saved by manufacturers stand to the credit of the faculty.

2. CINCINNATI AND PITTSBURGH UNIVERSITIES CO-OPERATIVE PLAN.

In these two Universities the Engineering Departments are carried on by a close co-operation of the Faculty with certain manufacturers in their several cities. The students for Engineering are carefully selected as to their ability and attainments. In the first of these Universities there is a waiting list of several hundred applicants for entrance. The students for Engineering are divided into two shifts; and each shift takes week about in shop and classroom. For their shop work the student apprentices receive the fixed pay of the mechanics of similar status beside them. Each alternate week the student confers with his professor and on his efficiency receives his credits. The connecting link between the shop and the classroom is the Shop Co-ordinator, who is a highly paid College graduate acquainted with shop practice. He spends every morning in the University classroom and every afternoon in the