The Department of Mechanical Engineering

PARTICULAR attention must be paid by the mechanical engineer to apparatus for the generation of power and to the machinery by which this power is utilized. But when we consider that the vehicles for this power are steam, electricity, water, air, gas, etc., it will be seen that the variety of apparatus is great. And when we consider further the design and construction of the infinite variety of machines by which power is used in the various branches of manufacture and transportation, it will not seem too sweeping to assert that the work of the mechanical engineer is necessary to all the industrial processes.

Then if we consider the question of the training of a mechanical engineer for his profession, the conclusion will be quickly reached that the problem is a hard one. A generation ago, when the first schools of mechanical engineering were established, there was but little experience of value to serve as a guide. The best judgment of able men was the sole resource in attacking the new problem. That problem was, how best to train men for a work that was seen to be necessary, but the limits of which were as yet indistinctly marked. Thirty years experience are now at command as a guide to what is needed to fit engineering students to begin their professional labors. Moreover, the fund of engineering knowledge has been vastly increased. Compare the treatises on engineering topics published during this period with those previously existing, and the truth of this statement will be realized.

It is not strange, then, that ideas should be changed and methods of training modified by the combined efforts of experience and knowledge. The conventional length of time for this training has been from the first four years. The amount of work that can be profitably given to a student depends upon his capacity for assimilation. More than this is quite like an excess of food—a little worse than useless. Consequently, the standard for admission to the engineering courses has been raised, and subjects curtailed, eliminated or added. A significant instance of this change, wrought by the passing of thirty years, is seen in the appointment for the present session, in one of our leading schools of mechanical engineering, of a Professor of Engineering Physics. The man appointed is a graduate in mechanical engineering, and is prepared for his work by years of experience as an instructor in experimental mechanics. The purpose is not to neglect general physics, for that is still strong, but to teach parts of the science as engineers in practice have found they need it taught. In our own institution, the course in general physics has been strengthened, while the special applications of the science to mechanics and thermodynamics have been intrusted to the professor of mechanical engineering.

The course in mechanical engineering is conformed, so far as possible, to what is now considered good practice. There is such a thing as an engineering market in which