

students for the most part readily do work hard. The close relation and interdependence of the many subjects makes the study of each more interesting. The engineering student who sees the practical importance of the Sixth Book of Euclid and of Trigonometry will naturally make more rapid advance in these subjects than the average arts students; and the engineering students of the many hours during which he can be seen to be really working hard both in the drawing-room and in the field, by his earnestness and activity, is found to have a good influence on the non-professional students who may be studying at the same college. Engineering has often been omitted from a list of the learned professions: might it not be urged that it is *The* learned profession?

All this work takes time and in some schools we find that plenty of time is given to it. In the French "Colleges des Arts et Metiers" work begins at 5.30 a.m. and goes on till 9 p.m., with only two and a half hours' intermission for meals and recreation—and there are no holidays! But even if we wish to take life more easily we can always find the necessary time by lengthening the period of the course. This is no disadvantage. The age of those entering in the practice of all the professions might well be raised, as it is found by experience that amongst men who have received the same training the older men do better work all along. And this points us to an object that the whole education of an engineer must aim at forming—good judgment. To the engineer it is of the utmost importance that he should at all times be able to give a clear and satisfactory answer to any question which may be submitted to him. From the first day on which the young engineer begins the practice of his profession totally unexpected problems will be continually presenting them-

selves which will usually demand an immediate answer. This answer, too, will not depend on theory alone; in fact, there will generally be a choice of several answers, each of which to the many theoretical men will seem equally good. A training, therefore, which does not enable the engineer to attack each question in a critical manner will lack one of the essential requisites.

But we should make a mistake if we were to imagine that even the best education that could be devised could in itself make a great engineer. Common sense is absolutely necessary, and education alone will not furnish it. The Scotch have long been noted for their zeal in the cause of education. We find a compulsory education act as early as 1496, and yet more than 250 years later the Presbytery of Edinburgh denounced the repeal of the penal laws against witches as "contrary to the express laws of God." In fact, as was pointed out in a recent address by Sir Benjamin Baker, the burning of witches went hand in hand with education in North Britain. Where was common sense?

Supposing a man has obtained the best training possible, what are his chances of obtaining satisfactory employment? Well, that depends almost entirely on himself. There are many who wish to practise engineering, but in this profession, as in all others, there is always room for the man who has the necessary training, determination, and energy. There has always been much talk about the overcrowding of the profession. In 1841 Mr. James Walker, in his presidential address to the Institution of Civil Engineers, thought it wise to warn the young engineers of that day that in his opinion there was every prospect that the demand for engineers would be likely to decrease, at least in England, where he believed all that was