at the principal centres of population have a membership each of from 100 or less up to 500 or more, averaging about 200. The importance of these societies has not been fully appreciated, even by their members, and the most enthusiastic will hardly claim that they are as yet fulfilling their largest or best function. They have in one sense boundless opportunities for useful work if only they can grasp them.

The total membership of these local societies aggregates in round numbers 20,000, so that for the purpose of discussion we may say that of the 100,000 men who claim the right to be called engineers 20,000 are members of the four national societies with headquarters at New York; about an equal number, including many of the above, are members of local societies, leaving over 60,000 of the men not enrolled in any engineering organization.

In the latter group are many men of ability and standing in the profession who have never seen the necessity of joining with their fellows in organized efforts. By far the greater part, however, are the younger or less prosperous men who are performing routine work in engineering offices or engaged in the details of the country surveyor and engineer. As a whole, they include the more poorly paid professional men, whose compensation averages less probably than that of the high-grade mechanics. We do not have any definite data on this point, but those who have employed engineers and graduates of engineering schools are ware of the fact that, under present conditions at least, we can obtain the service of highly educated skilled engineers as computers, draftsmen, office or field assistants at a nominal wage.

It is not the "submerged tenth" but the six-tenths for whom special appeal should be made to ascertain whether their condition may not be improved by applying to it the same painstaking study to ascertain the true facts and to provide a remedy as should be done by the engineer to meet and overcome physical obstacles. If we can solve some of the great problems of control of electrical current, of storage of floods, of winning coal and iron from the earth, of devising ingenious mechanism, we should be able by using the same degree of intelligence to materially improve the human machinery. We have, however, in the past often overlooked the things which lie nearest to us while going to the unsettled west, or to the ends of the earth, to attempt tasks more remote.

To this large body of engineers there is being added each year about 5,000 recruits, mainly from the engineering colleges, more or less well trained in the fundamentals of engineering. There was a time within recent years when there was a demand for every one of these young men in active engineering work. At present, however, it is necessary that many of them go into other lines. It is not to be supposed that their education is by any means wasted, as the training of a good engineering college is probably the most valuable to be had in preparing young men for their life work in lines of trade and commerce. While during the first few years they may not receive salaries as high as that of other men of their age who have gone into business directly from the common schools, yet in the long run the training they have acquired gives them opportunities for more rapid and substantial progress.

One of the problems that is now confronting us is the fact that each year this large group of graduates, as well as the thousands of young men employed in engineering offices, are coming into a profession apparently overcrowded. This overcrowding, however, is more apparent than real. A relief is to be obtained not by limiting the influx of men, but rather by widening the field of service.

Opportunity.—The field is practically unlimited, the bounds extending with every improvement in the conditions favorable to human health, comfort and industry. Artificial limits, the cramping efforts of which we now appreciate, are set solely by ignorance. They exist only in the mind, and arise because of lack of knowledge by the public in general and of individuals in particular. To put it in another way, if every taxpayer and voter in the country, every town, city, county and state officer was fully aware of the conditions which surround him, and the extent to which the engineer could remedy or improve these conditions, there would be an immediate demand for all engineers who could be found. Take, for example, the matter of road-building. The public has been slowly educated toward the need of good roads, but not so fully to the fact that to build these good roads a certain amount of skill and experience is needed. We have the spectacle, surprising in a country which prides itself on its good sense, of millions of dollars being spent on new roads and in improving old roads, often without any preliminary survey or study of correct location or preparation of plans and estimates, nor of adequate supervision of the work, even if well planned.

The amount of money which is being wasted to-day in the amateur efforts of elected officers, who will be replaced next year by men no better qualified, would furnish employment to a great part of the engineers in the country. The point to be observed, however, is not that we are arguing for the employment of these men, but that the claim is based upon the far more substantial grounds of benefit to the public and to the man who pays the bill.

Take the matter also of public health. Imagine for a moment that every local official was aware of the conditions which are effecting the health of his community and of his family, and that he knew that these conditions could be remedied by intelligent and skilful engineers, and, moreover, that the cost of this work would be far less than the extravagant waste of time and money now taking place because of preventable sickness and death; would he not at once set about employing the men who could save not merely the money values, but what is far more precious, the happiness and lives of his own kind?

The opportunities are boundless—they stand on every hand ready for us when we awake.

Salesmanship.—To properly seize the opportunity the engineer who rises to the occasion must cultivate some of the qualities summed up in the term "salesmanship." We recognize that the success of many a merchant is due to a peculiar art which he has acquired and one which enables him to sell goods at a profit. We have more slowly come to recognize the fact that his success is due not to the fact that he personally makes a profit, but that the other party, the world to whom he sells, is benefited. It is true that for a time the merchant may sell inferior goods and may temporarily make money by so doing, but in the long run he has learned that the established business can only rest secure on honest advertising and on the realization by the public that he is performing a real service to mankind.