

FIRE INSURANCE ENGINEER.

One of the features by which the present age is distinguished from earlier ones is the development of entirely new forms of industry calling for special qualifications some of which are entirely novel, others are adaptations of old equipments to modern needs.

Every advance made in scientific knowledge and its utilization for industrial purposes has met with alarmist outcries that the new methods would restrict the opportunities of labour. The railways at first were declared to be especially dangerous in this respect as they were gradually throwing coachmen, conductors, grooms, stable boys, etc., etc., out of employment. Yet, for every one of these classes formerly employed there are now a hundred engaged on railways. So with power looms, and other machinery, they threw some out of their old-time work, but, by cheapening goods increased production a hundredfold and provided work for multitudes. The establishment of new industries in a country confers one very great benefit which is not fully appreciated, which is, the widening of opportunities for young persons to cultivate and exercise profitably their diversified natural gifts and tastes. The more these opportunities are multiplied the richer a nation becomes in the value of its industrial resources, the most valuable of which, after all, is said, is the energy and skill of the people.

These reflections were suggested by reading an article in the "Technology Review" which deals with the qualifications of a fire insurance engineer. Here is a new industry, a new profession, or, a new and special application of outgrowths from the acquirements of an old one. The writer is Mr. Gorham Dana, who was recently appointed manager of the Underwriters' Bureau of New England. He resigned an appointment as professor of civil engineering at the Massachusetts Institute of Technology to become inspector of the Underwriters' Bureau from which office he was recently promoted to that of manager. We draw attention to this with a view to showing young Canadians what opportunities are being opened for those who are specially qualified for the duties of new departments of the fire insurance business. The Insurance Institutes can do an invaluable work by providing courses of study which will discover to youths and young men their possession of some latent, some undreamt of talent.

The requirements of a fire insurance engineer are stated as follows:—

1. He should have training in hydraulic engineering. Water is the world's greatest fire destroyer, and to arrange for its economical transportation and distribution with the aid of all the modern devices, so that it may be obtained when needed, at an instant's notice, is, perhaps, the most important duty of the insurance engineer.

2. He should have training in mechanical en-

gineering. Numerous complicated devices for fire protection are continually being put on the market. These he should be able to understand thoroughly, to find their defects, and to suggest modifications and improvements in them. He should also be able to become quickly familiar with machines used in manufactories, above all those that involve any fire hazard. Some knowledge of steam engineering is of great value, especially in pump work. Experience in drafting is also necessary in plan work, which is an important department of insurance engineering.

3. He should be well grounded in chemistry and able carefully to investigate all chemical processes and compounds that are in the least hazardous in their nature.

4. He should be an electrical engineer, or have enough electrical knowledge to be able to follow the modern development of electricity for power, light and the transmission of signals.

Finally, this being one of the youngest branches of engineering, many problems remain undiscovered and unsolved, and the insurance engineer should possess that originality which, combined with a thorough scientific training, will enable him to cope successfully with new problems as they arise.

THE DANGER SPACE IN FRONT OF STREET CARS.

Several fatal and otherwise distressing accidents on street car tracks show that both motormen, foot passengers and drivers of vehicles, do not realize that in front of a moving car, at whatever speed it is going, there is a space upon which to enter involves certain mutilation with every chance of death. The faster the speed, the longer is that danger space, and the steeper the gradient, the more is this risky area extended, even when a car is running at a low rate of speed. It is a daily sight to see foot passengers and vehicles crossing the track in haste to escape a car. Narrow escapes from death in this city occur daily, as wherever there is an electric car service. When a disaster occurs the motorman is blamed almost always most unjustly. He cannot tell whether a person is going to rush across in front of his car, or act rationally by waiting the fraction of a second, whereas, all persons afoot, or in vehicles, can usually see a car when it is hundreds of feet distant, and they know that it will keep on the track and be nowhere else, and certainly will not pull up to give them time to consider whether they will stand still, or move forward.

Under such obvious, but little recognized conditions, the street car companies would do well to drill their motormen and conductors, so that they may have a thorough knowledge of the conditions under which their responsible work is conducted.

A civil engineer writes: "Not one motorman in twenty fully realizes the length of the dangerous space in front of his car, or knows from experience what actual space is required for stopping the car at the various speeds at which he is wonted to run. Until this knowledge is generally disseminated and