and the dregs we get? Here is the account in part for the three latest years:—

Three years, 1909-1911.	Killed.	Injured.
Fires	792	. . . .
Industrial	2,729	5,873
Steam railroad	1,467	4,751
Electric railroad	265	7,347
	5,253	17,971

No official record has been kept of persons injured in fires, but the number is large. The above figures, compiled from official sources, show that fires, industrial and railroad accidents have killed five persons and injured sixteen persons every day during the past three years. That is the total, in cold facts, of the quickly forgotten daily incidents. In addition to lives lost in fires, the annual fire waste in Canada amounts to an average of $20,000,000. These losses of life and property are shown, by careful analyses, to be caused largely by carelessness, caused in turn by an insane desire for speed. Adequate fire resistance is sacrificed for the sake of speculative building, which has become almost synonymous with the erection of poor quality in the quickest time for the most money. Our building by-laws are generally lax. Loose matches are an every-day danger. On every hand, one sees carelessness with fire risks.

Sometime ago, the subject of industrial accidents was discussed in parliament. Mr. H. H. Miller submitted a resolution, stating it to be the duty of the government to make a thorough investigation as to the facts and conditions as a result of which some means might be devised for the better protection of employees and of preventing so great a loss of life and so great and frequent accidental injury. The Minister of Labor at that time made the following statement: "We can say with certainty at this moment that a year hence another 2,000 lives will be swept off the list of workers in Canada, and in another two years there will be 20,000, whose industrial efficiency will be permanently impaired as a consequence of the callings in which they are engaged."

Our railroad accidents constitute the worst feature of the price we pay for hustle. Since 1888 to the end of 1911 7,728 persons have been killed on Canadian railroads and 27,574 persons injured, an annual average of 322 killed and 1,149 injured. Here, again, we can find the same basic cause, viz., the delusive craze for speed. Delayed trains are forced to make up time with disastrous results. Hazardous risks are taken by those responsible for operation with the lives of hundreds at stake. Taking chances is the curse of American railroading. Carelessness, which usually is the direct result of speed ambition, in some shape or form, accounts for a large number of accidents. Last year, for instance, 36 persons were killed and 108 injured by trains at highway crossings. An improvement was seen in the number of protective crossings, which increased by 166 over the preceding year. There is probably in that fact a direct connection with the reduced number of accidents at highway intersections during 1911. These crossings are usually protected by gates, overhead bridges, subways, bells and watchmen. The last two have been proved by experience to be of little value. Gates, which usually consist of cross bars under which pedestrians can climb and certain vehicles even can pass, are practically useless in that form. The present style should be abolished and one substituted which, when shut, should be non-negotiable by any kind of traffic. Overhead bridges and subways are by far the best form of protection.

A tendency was shown during the recent parliamentary discussion respecting industrial accidents, for the Minister of Labor to place the responsibility upon the industries concerned. That is a right view only after parliament has enacted stringent laws, and, more important still, has seen that they are enforced. The standard of public safety to which we are supposed to adhere is too low. It must be raised by our legislators and we must act up to it. After that, workmen's compensation is largely a matter for the railroad or other industry involved in lengthening the list of killed and injured.

These figures do not make good advertising for Canada, but idle boasting of our progress without self-examination of our weaknesses ultimately will only work to our own disadvantage. The public are demanding speed. They are being given it. The price paid is shattered nerves, human life and limb. In the meantime, legislators remain idle in face of duty.

EDITORIAL COMMENT.

In an editorial on "Sanitary Engineers Needed," one of the daily papers of Ottawa states: "The people are coming to realize the reason for the unsatisfactory results obtained from the public health service in charge of medical doctors. They are beginning to see that the public health to be adequately protected must be looked after by sanitary engineers, rather than by general medical practitioners. There are still some, however, who hold the opinion that a Federal department of public health would correct the shortcomings of the existing provincial and municipal health departments. This proposal, however, as at present outlined, could only result in increasing the number of general medical practitioners in the public health service, and the chief cause for the unsatisfactory results would thus be left untouched, if, indeed, not increased." We are glad to note that the public are beginning to appreciate the difference between the practical methods of the engineer and the visionary schemes of many of the medical profession.

LETTER TO THE EDITOR.

Sir,—The following is a simple method for determining voids in sand. I don't know whether this has been used before, but if you have no record of it, I would be glad to have you publish it. I would also like to have the opinions of the various engineers upon this method.

For convenience, use a glass cylinder graduated to 200 c.c. Fill with water up to the 100 c.c. mark and then pour in 100 c.c. of sand. There will be no necessity of measuring the sand before hand, as the cylinder containing the water will also measure the sand. When the 100 c.c. mark is reached, the water will have risen a certain amount, subtracting this reading from 200 will give the percentage of voids in sand, without any weighing.

This is obvious, due to the fact that there were 100 c.c. of water to start with, and if there are, say, 62 c.c. of water above the sand, there must be 38 c.c. filling of voids in the sand, and as there are 100 c.c. of sand, the percentage of voids would, therefore, be 38%. Taken another way, the total reading in this case would be 162 c.c. which, subtracted from 200, would equal 38.

L. S. BRUNER,
Manager of Publicity,
Canada Cement Company, Limited.