

caused by the explosion of the vapors generated while varnishing the vats. The varnishing of vats in the buildings should be strictly prohibited, and a clause to that effect added to the policy. The preparing or pitching of the kegs is generally done in the open yard space. The pitch is melted in an iron kettle, heated by direct heat, a suitable quantity is poured into the keg, which is then well shaken, so that the pitch may be evenly distributed. Care must be taken to prevent the pitch from boiling over and running into the fire. When the pitching is done in the yard at a distance from the buildings, no special hazard is connected with it. The general character of the brewery employee is well known to all who have often come in contact with him, and need not be specially commented upon in this paper. The brewing of ale is only a modification of the above-described process, and all the hazards enumerated are encountered in ale breweries. In distilleries the process is similar to that of brewing to the point where the mash is made. All the milling and grain hazards are met with in distilleries. The grinding, however, is not done by roller mills, but usually by horizontal burr stones. The inflammable nature of the spirits produced is of course an additional hazard in the distillery. It is not necessary to mention the general construction of a brewery, excepting to state that modern breweries are usually well and strongly built. We would caution against the use of wooden cornices and large wooden signs. A failing most brewers have is outward show, at the expense of safety in case of fire.

The fire defence of a brewery is not necessarily different from that of any other special hazard. There is always plenty of water and plenty of hose. Buckets freely distributed throughout the mill house, and especially near the mill and the cleaning machinery, are very serviceable. A steam jet introduced direct from the boiler into the hopper under the malt mill, with a valve to be turned on near the mill, may be of good service in case of a fire, but not in case of an explosion. In closing we would only mention the moral hazard—a hazard which belongs to each brewery *per se*, and need not be dwelt upon in connection with the general fire hazards of a brewery.

THE MONTREAL FIRE DEPARTMENT, PAST AND PRESENT.

PART II.

BY ALFRED PERRY.

(From the Herald.)

The bombardment of Alexandria by a portion of England's navy will have afforded our fire brigade a lesson as to the necessity and the utility of drill. No one amongst them can for a moment dispute that the fact of the batteries being silenced in so short a time, and gun after gun knocked endways, could not have occurred under England's greatest admiral in former days. The men of to-day are not more brave than those of former times. It is the drill and improvements that have led to such glorious results.

I do not wish it to be understood that I blame our men individually, or the system of having a permanent paid force. I blame those at their head for not having devoted some of their time in studying where difficulties exist. Under the volunteer system, officers and men entered into it, not for pay, it was for the love of the calling, and the general good to be accomplished for the city by it. The existing head of the brigade has oft-times undeservedly been severely censured for his apparent neglect or incompetency by the press and others, forgetting the fact that a man to fill and be competent for the position should be born a fireman and educated for it. He should have an instinct for the work, and be able to instil it into all under him in the force. If, by unforeseen circumstances, the present head occupies the position, the fault does not lie at his door. He is there for a living, as any one else similarly placed would like to be. The insufficient salary paid by the city to the chief is out of all proportion to the office, and I venture to say no one competent could be found to accept the position for the pay. I

attribute this not to the system but to the want of drill. Drill, ere this, would have taught those in charge of the salvage waggon, which I think they know too well, that it is too heavy by some hundreds of pounds and cumbrous in the extreme. It would have taught them that driving it with a pair of horses to the suburbs is not required. It would also have taught them the folly of employing and keeping up horses and men to go to fires in the city proper without ample covering to protect one flat in six. If the men were well drilled by the chief and under proper discipline any recommendation he might make to the Fire Committee, I feel persuaded, would be entertained to obviate this difficulty. Drill ere this would have taught the heads of the Brigade that the business or commercial centre demanded some greater facilities than the Central Station can furnish. Drill would before this have shown them that it is folly to be distributing the force on the extreme ends of the city when, if a proper tabular record of fires was kept by them, it would prove that there is 90 per cent. more fires and loss annually in the centre than on the more distant points where the stations are planted. Drill and an intelligent record would enable the Fire Committee to know that there are stations kept up where the men are seldom or ever known to work at one fire in a dozen, and in this one instance it is in the centre their service is employed.

I would ask the Fire Committee to abandon their intention to have the annual inspection on the Champ de Mars, and instead to order the force to be prepared to assemble on Dominion Square and try their best to put a ton or a bucket of water on or over the lowest part of the Windsor Hotel. Have them take their ladders and endeavor to scale it, also. Was this Hotel once on fire in the topmost flat, can it be safely reached? If not, will they give it their attention? The same remarks can be applied to the magnificent block of buildings known as the Church and College of the Jesuits, on Bleury street, with many others I could name if it was necessary to do so. The proprietors of these buildings have some reason to claim that in the event of fire the same protection should be afforded them as is given to others of not one-eighth their value.

Drill would instruct the head of the existing force, that a man who has only one leg is of little or no use as a fireman. The requirements of the city demand a different state of affairs. No one would tolerate it for an hour if he felt he had the responsibility of his position. The foreman so incapacitated is well deserving of being provided for by the city. He lost his leg whilst on duty at a fire, but that is not a reason that he should be retained on the force as an efficient fireman in charge of a section; it is one of several defects now existing, which give force to the statements in regard to the recent fire on Victoria Square. I observe that since I wrote my previous communication that the Committee are to meet the representatives of the several Insurance Companies. It is to be hoped that ere they do meet the Fire Committee they will have some defined plan to submit to them. If not, it would be much more to the point to remain away. The Chief of the Department is an old tried servant, and, so far as he knows how, has given proof of honesty of purpose. If he is to be removed, as I see by the press it is their intention to request, why not, in exchange, put him into the Building Inspector's office, as such, for the Western section of the city.

The expense of the volunteer organization was nine thousand six hundred dollars per annum. This including the water supply. The cost of the existing organization is sixty thousand eight hundred and ninety-six dollars per annum. The interest on the water-works, at a cost of six millions, is three hundred and ninety thousand dollars. One third or \$120,000 of this amount may surely be charged to fire protection; in all, one hundred and eighty thousand dollars per annum is what the citizens' pay for such displays as occurred at the late fire; not accounting the loss to the underwriters, and indirect loss of business to the insured. Under the volunteer organization there were members who wore medals obtained for saving life and various acts of daring in subduing fires. Under the paid system, medals are granted at picnics to the best man who climbs a greasy pole, holds a pig with the greased tail, runs 300 yards or shoots a turkey. In no case have medals been granted for merit under the paid or present organization for acts of bravery in saving life.