

## Conflagrations and Building By-Laws

Analysis of Conflagration Conditions in Canada. Construction Outside Municipal Fire District Should Be Regulated

An enquiry into existing conditions in Canada shows that no city or town is free from the danger of conflagration. In some, the hazard is severe; in others, it has been modified by recent construction; in all our cities and towns the hazard is bad. The chief of every city fire department fears the day when he will have to solve for himself the problems that have confronted the organized brigades at Montreal, Toronto, Ottawa and other cities. In a general way, it may be said that the larger cities and towns in Canada consist of compact brick and stone business centres, surrounded by districts constructed almost entirely of wood. Frame buildings, to a greater or lesser degree, constitute the mercantile centres of the smaller towns and villages and whole sections of the residential areas.

In the congested business areas of cities, the more recent buildings are of a good type, but are usually too high for efficient protection by the available water supply under conflagration conditions. The older buildings are of a poor class, ranging from frame to ordinary joint construction. Many have large floor areas that would give an unbroken sweep to fire. Intermingled with the good and bad construction are buildings dilapidated beyond repair, forming a constant menace to adjoining structures. In nearly all buildings the floors are pierced with numerous unprotected openings for stairways, elevators and skylights. The windows of one building are permitted to exactly oppose similar windows in adjacent buildings without any provision to minimize the exposure hazard. To the exterior of many of the buildings, immense metal-covered wooden cornices, useless domes, mansard roofs and other combustible features have been added, entirely destroying the fire protective value of brick and stone walls.

Outside the business centres of cities and towns, there is, invariably, a zone of cheap construction. Municipal boundaries have been extended from time to time, with the result that the poorest classes of buildings have been brought within the limits. These endanger all buildings thereafter erected in proximity to them. This outer zone generally includes the main residential sections, which are, in many instances, closely built-up districts of cheap brick veneer and frame buildings. Construction is extremely defective, owing to the speculative features that enter into the ownership of such property.

Beyond the outer area again are hundreds of suburban real estate

developments, composed entirely of wooden buildings. Without restrictions, every builder has been a law unto himself. In many cases there is congestion through the efforts of real estate men to sell the maximum number of lots per acre. These subdivisions are absolutely devoid of fire-retarding features and have little or no protection from public fire departments. They form a problem in themselves and, at the same time, constitute a menace to the cities which they adjoin. A fire, well started in such a locality, with a strong wind blowing, is exceedingly difficult to control. As a matter of fact, such fires seldom are extinguished until they have burned out, or are blocked by some natural barrier, such as a river, park or other open place. In their sweep they annihilate everything combustible and destroy homes which represent the investment of years of toil and saving by those who can least of all afford the loss. The sad experience of scores of small communities justifies and demands legislation that will operate to control all forms of construction outside of municipal fire districts. This is not only of importance to the particular community itself, but vitally affects the future extension of the city or town to which it stands adjacent.—J.G.S.

Note.—Of the fire loss in Canada (excluding forest fires) during the last 50 years, 36 per cent has been due to conflagrations, but only one fire in 20,000 reaches the proportion of a conflagration.

## REVOLUTIONIZE THE FIRE DEPARTMENT

Are we serious in our attempts to combat the fire waste? The records of 1917 hardly prove it. To the most superficial observer it is obvious that we are directing our energies along wrong lines. Despite first-class fire fighting equipment and firemen amongst the most expert in the world, our losses continue unabated. Our most efficient fire brigades are utterly discomfited by the raging conflagrations that, with increasing frequency, destroy buildings, devastate whole communities and wipe out human life. Canadian municipalities spend millions of dollars annually for the maintenance of fire departments and a few paltry dollars in fire prevention. Without deprecating the provision of adequate fire extinguishing facilities the short-sighted policy that neglects preventive measures must be condemned. The fire departments of the country should be revolutionized. For every dollar appropriated by municipalities for fire protection, fifty cents should be used for fire prevention.—J.G.S.

Soldiers crippled in the war are being trained in England to tend electric machines and as assistants in power stations.

## Factors in Production

### 4. Treatment of Grain for Smut

Save Millions for the Country by Removing the Smut Evil

The annual losses from grain smuts in Canada are much greater than is commonly supposed. Various estimates have been made, the smallest of which is serious indeed. We cannot afford it. On one farm in Dundas county, Ontario, 37 per cent of the oat crop was found on careful examination, to be ruined by smut. The loose smut of oats is one of the commonest and most troublesome of grain smuts in this country and in fields which appear to be but slightly affected the losses, if known, would be truly startling. *Oat smut can be prevented by treating the seed with formalin.* The following method is recommended by the Ontario Agricultural College: Mix one pint of formalin with 40 gallons of water. Place the grain to be treated in a heap on a clean canvas or floor. Sprinkle the formalin solution over the grain, then shovel the grain over into another pile so as to mix it thoroughly, then sprinkle and shovel again. Repeat this until every grain is moistened by the solution; then cover the pile with sack and leave for three or four hours. At the end of this time, shovel the grain out thinly to dry; shovelling it over three or four times will hasten the drying. Forty gallons of the formalin solution is sufficient to sprinkle between thirty and forty bushels of grain.

Never expose wet grain to a temperature below freezing. If the grain is sown while moist, it will not run as freely as dry grain; for this reason open up the drill somewhat or the stand will be too thin.

—F.C.N.

### FARM FIRE PREVENTION

The protection from fire of farm properties is a problem which has seldom been attempted in any practical way, aside from the exceptional use of fireproofing materials. In a small town in Ohio, Hollandsburg, the villagers and the farmers within a radius of five miles have combined forces. They have purchased a motor-truck equipped with chemical extinguishers, ladders, etc., and arrangements have been made for answering fire calls anywhere in the district. If this experiment proves successful, a widespread adoption of the plan should follow.—Industrial Canada.

It was estimated in 1907, after a full enquiry, that the annual average loss caused in Great Britain by each rat was \$1.80, in France \$1.00, and in Denmark \$1.20.

## Where is the Fuel for Next Winter

Reliable Information Obtained by the Commission of Conservation Points to a Decline in Production

Fore sight is always more efficient than hindsight, but in handling the coal situation a combination of both is better than either alone. The growing scarcity of fuel during the past few years culminated in a near catastrophe during the present winter. It has surely been demonstrated beyond peradventure that it is very dangerous to try to "muddle through" any longer. The experience of the past has not been lost if that lesson has been thoroughly learned. Indications are not lacking, by any means, that the shortage of coal next winter will be more acute than ever. The output of the Nova Scotia coal mines has declined from 7,263,485 tons in 1917 to 1913 to 5,657,000 tons in 1917 to 22.75 per cent. Owing to the steadily growing scarcity of mine labour and to recent serious mine accidents it is evident that there must be a further marked reduction in 1918. At the same time there has been a large increase in the consumption of coal in the Maritime provinces during those years. In fact, it appears as if the Nova Scotia mines will not be able to do better than to supply their own requirements and those of the Maritime provinces. If this is done little or no coal will be available for Montreal and it is assumed that Nova Scotia coal will be available for Ontario. Fore sight indicates that in the woodpile lies one of the means of preventing panic and disaster next winter.

### FIGHTING BASEMENT FIRES

Fires originating in the basements of business buildings constitute one of the most potent causes of fire loss in Canadian cities. It is difficult to believe that the owners of such buildings are entirely ignorant of or fail to appreciate the value of dry sprinkler systems for basements. The fact that the expense for the installation of special water supplies is involved makes the cost reasonable. A dry sprinkler equipment for basements consists of distributing pipes with sprinkler heads as in the ordinary system but with the supply main carried to the outside wall of the building where it ends in an ordinary hose connection. When an outbreak of fire occurs in the basement the nearest sprinkler head is opened by the heat, the firemen attach their hose to the external supply connection and the water is immediately directed upon the seat of the fire. The complete saturation of the contents of the basement is thus avoided, the firemen can effectively operate despite the dense smoke which is common to all basement fires and the loss by both fire and water is largely minimized.—J.G.S.