

Conservation

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Safety of Children

Their Protection the First Duty of Teachers—Fire Drills a Necessity

With the ingathering of the children to the schools after the summer vacation, especial safety precautions are necessary. The children are either new to the school or unaccustomed to the surroundings of a different classroom. Naturally they will be more or less nervous, protection of the lives of the pupils is the first duty of the teacher, and early preparation should be made to accomplish that purpose.

FIRE DRILLS IN SCHOOLS

One of the greatest dangers where many children are assembled is fire, and panic following an alarm of fire. To meet such an emergency, teachers should at the first opportunity initiate fire drills among pupils. Fire drills cannot prevent fire, but aim to avoid the panic which usually accompanies it. The principal object is to prevent the panic, and the chief point is to secure orderly and rapid exit of pupils. The pupils should be thoroughly familiarized with the fire alarm signals, so that no delay may be caused through confusion. The aisles and exits should be kept free and unobstructed. It is usually advisable to have pupils leave the school two by two, and teachers should always remain to ensure that no child is left behind. Some of the older children should be selected as monitors, to act as leaders, or to care for such special articles as the school roll, etc. It is important to teach the pupils in the course of fire drills to overcome obstructions and to be prepared to meet emergencies in the event of an actual fire. The fire drill should be conducted in a business-like manner, for the purpose of getting the pupils out and away from the building as soon as possible. It should be practised frequently but irregularly, as repetition will familiarize pupils with their duties, and in the event of

Prohibition of Sale of Game

Attitude of Hunters Towards Proposal—Game Guardians Favourable

Total prohibition of the sale of game is a measure which, however urgently required, has hitherto not received, in Canada, the organized and energetic advocacy necessary to ensure its early adoption and widespread, sympathetic support. Nevertheless, the cause is steadily gaining recognition among officials directly connected with the work of protecting wild life. The following extract from the latest report of the chief game guardian of Saskatche-

wan is important, as indicating the favour with which hunters as well as game guardians view the proposal to prohibit absolutely the sale of game:

"The agitation for an amendment to The Game Act, prohibiting the sale of game, is gaining strength. Last year we put the question to our game guardians, and they were almost unanimous in prohibiting the sale of all kinds of game. This year we thought it would be advisable to get the opinions of big game hunters regarding this matter, as it was from this quarter that we expected to receive most opposition to this proposed amendment. Out of 153 replies received, 88 favour

Tank Cars for Fire Fighting

Canadian Railways are being Equipped for Forest Protection Work

The management of the Government railways has made material progress in fire protection in Quebec since taking over the line of the National Transcontinental for operation. A tank car, for fire-fighting purposes, has been equipped and will be stationed at some convenient point between Edmundston and Quebec. This car has a capacity of ten thousand gallons and is equipped with hose to reach a fire five hundred feet from the track. The question of placing two similar cars at convenient points between the City of Quebec and the Ontario boundary is under consideration. Special fire patrols will also be necessary, and the details are being considered. Hon. Frank Cochrane, Minister of Railways and Canals, has announced that the same measures for fire protection will be taken on Government railways as are required by the Railway Commission of lines under private ownership. The measures referred to above constitute an excellent beginning. The Government railways are not under the jurisdiction of the Railway Commission.

Special tank cars for fire-fighting purposes constitute efficient means of conserving forest resources along railway lines. The Canadian Pacific railway has two such cars stationed at Brownville Junction, Maine, where serious fires had previously occurred. The Grand Trunk railway also has equipped a tank car during the present season, placing it at Algonquin Park station, to be used in extinguishing fires along the railway line between Ottawa and Depot Harbor, especial attention being given to that portion of the line within Algonquin Park. Excellent results have been secured by both the Canadian Pacific and Grand Trunk railways from the use of these cars for fire-fighting work.—C.L.



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Test of Grand Trunk tank car, equipped for extinguishing forest fires along the railway line between Ottawa and Depot Harbor, with especial effort to Algonquin Park. Four streams can be played on a fire at the same time, if necessary. Fires can be reached, up to a distance of several hundred feet from the track. This tank car has already proved very effective during the fire season in May and June. Similar cars are maintained by the Canadian Pacific Railway at Brownville Junction, Maine, and by the National Transcontinental on Quebec line south of the St. Lawrence river.

fire they will not be taken unaware.

FOR FIRE PREVENTION

All school buildings should be provided with metal receptacles for waste paper and refuse, which should not be allowed to accumulate in basements or in wooden boxes or barrels. The heating system, whether stoves or furnaces, should be carefully inspected to guard against fire. All doors should open outward and should never be locked during school sessions. Chemical fire extinguishers and fire buckets filled with water should be provided.

prohibiting the sale of game altogether, 46 favour the sale of game and 9 favour the sale of game under certain conditions."

Such an encouraging response from those who, as a class, stand to gain most from the commercial exploitation of wild life suggests that more whole hearted efforts only are required to overcome all obstacles to the removal of this evil. The time is ripe for a Dominion-wide campaign, enlisting the aid of all agencies directly or indirectly interested, in checking the inroads on our game resources.

Fuel Supply of Prairies

Briquetting of Lignite Required to Permit of its Economical Use

One of the most important problems in Canada at the present time is the provision of an adequate supply of cheap fuel for the population of our Prairie Provinces. Very large areas of these provinces are underlain by beds of sub-bituminous coal and lignite, which are estimated to contain 100,000,000,000 tons of these fuels. As yet, however, practically all the fuel used in that portion of the plains east of Brandon is imported from the United States, while that used in the country west of Brandon is brought chiefly from the coal-fields of the Rocky mountains. This entails a long and expensive haul, which results in a high-priced fuel, and any temporary interruption of the supply gives rise to a coal famine.

The reason why the mineral fuels of the plains have not been utilized is that they are expensive to mine, owing to the absence of supplies of mine timber on the treeless prairies; they are also of a lower grade than the coal from the Rocky mountains, containing a large percentage of moisture. They thus have a lower heating value than the fuels from the mountains, and furthermore when they are exposed to the atmosphere after being mined, they dry out to a certain extent, and in so doing crumble to pieces or even fall to powder, so that they cannot be readily handled and will not bear transportation. Such being the case, if these fuels are to be made available for household use, they must be briquetted, or if they are to be used for manufacturing purposes, they must be either briquetted or used in gas producers.

A series of trials of Canadian fuels, recently carried out by Dr. J. B. Porter and Prof. Durlay of McGill University for the Mines Branch of the Department of Mines at Ottawa, show that these fuels of the plains are excellently adapted for use in the gas producer and are thus well suited for the production of power. The question as to whether they can be briquetted, when necessary, at a sufficiently low cost to make the enterprise commercially profitable, has not yet been established. Fuels of this general type are briquetted in Germany on an enormous scale, and the United States Bureau of Mines is now investigating the possibility of briquetting the lignites of North Dakota. Any lignite can, of course, be briquetted if a suitable binding material is employed. This, however, entails additional expense, but many of the German lignites and some of those occurring in North Dakota can be briquetted without the addition of any binding material. It is thus very im-

portant that an investigation should at once be made into the question as to whether there are not, among the great deposits of fuel underlying the Canadian plains and outcropping on their surface, some at least which can be worked for the production of a cheap briquetted fuel which will stand transportation, and thus supply a need ever more insistent as the population of the Prairie Provinces increases.—Dr. Frank D. Adams, at 1915 Annual Meeting of Commission of Conservation.

Forest Fires Along Railways

Settlers' Clearing Fires Responsible for Numerous Losses

The latest report of the Fire Inspection Department of the Railway Commission shows that during

ways, on the whole, handled their fires efficiently, showing great improvement over the situation which existed before the Railway Commission issued its revised fire regulations in 1912. In many sections of the country, the railways are undoubtedly handling their portion of the forest fire protection problem in a more efficient way than are the respective governmental agencies. The latter are more or less hampered by lack of funds and by the patronage system of appointments. The private owners only too frequently afford little or no protection to their forest lands. In particular, the problem of regulating settlers' clearing fires is still in an unsatisfactory condition throughout a considerable portion of Canada, due either to the lack of proper legislation or to the difficulty in securing satisfactory observance of such laws as have been enacted.—C.L.

At the request of boards of trade, municipal councils and other public bodies interested in the subject, the Commission of Conservation has decided to undertake an investigation into the fire waste in Canada, with a view to suggesting means to overcome the heavy annual fire losses. The inquiry will be conducted under the direction of Mr. J. Grove Smith, B.A., B.Sc., head of the statistical department of the Canadian Fire Underwriters Association. An exhaustive study of both cause and effect of Canada's fire loss will be carried out, and a report embodying the result will be published by the Commission as soon as this work can be completed.

In 1914 a total of 1,346 fires were reported as having started in forest sections, within 300 feet of the railway track, on lines under the Board's jurisdiction throughout Canada. These do not include Government railways or lines under provincial charter, comprising about 15 per cent of the railway mileage of the Dominion, for which no fire statistics are available.

The report states that the 1,346 fires burned over a total area of 191,770 acres, of which 49,326 acres, or 25.72 per cent, was young forest growth and 107,496 acres, or 65.05 per cent, merchantable timber. The balance of the area burned over was grass or cultivated land and slashing, or old burn not restocking. The total value of property destroyed by the fires was \$433,442 of which \$202,987 was for merchantable timber and \$59,024 the estimated value of young forest growth destroyed. Of the above 1,346 fires, 904, or 67.16 per cent, were reported as having been caused by railway agencies; 137 fires as due to tramps, camp fires, etc., 62 fires as due to settlers clearing land, and 16 to other known causes. There were 27 fires reported as of unknown origin.

While the fire season of 1914 was one of the worst in years, the rail-

There is already a law in the province of Quebec which requires settlers to secure a permit from a forest officer before setting fire to their clearings, during the spring and autumn periods. British Columbia has a similar provision, applicable to the period between May 1 and October 1 of each year. The regulations for Dominion forest reserves, located in the three prairie provinces and the railway belt of British Columbia, similarly require a permit for settlers' clearing fires between April 15 and October 31 of each year.

Past experience has shown conclusively that the permit system, wherever adequately enforced, reduces to a minimum the damage from the spread of settlers' fires, which have cost the country millions of dollars in the past, in addition to considerable loss of life. Ontario is the only great forest province in which no action along this line has been taken. The Ontario Act does not forbid the setting of clearing fires at any time. It merely prescribes that, where such fires are started, the settler shall exercise and observe every reasonable care and precaution in the setting out or starting of such fires and in the managing of and caring for them after they have been started, in order to prevent them from spreading. Experience all over Canada, and particularly in Ontario, proves that such provisions are not adequate, and that legislation is necessary to prevent altogether, or at least to regulate, the setting of clearing fires during periods of the year when there is a possibility of such fires spreading and doing damage. It is in the interests of the Province of Ontario to follow the progressive lead of the other provinces in this matter, which is of the greatest importance from the point of view of forest conservation.—C.L.

Fire Permits Required

Results have Shown this Method Necessary to Control Settlers' Fires

During the early summer of 1915, serious fires, causing loss of property amounting to several hundred thousand dollars, occurred in the vicinity of the International railway of New Brunswick, now a part of the Government railways system. These fires were due to the slash-burning operations of settlers during a period of drought. Following investigations by the chief fire and game guardian of the province, the Minister of Lands and Mines, on July 10, promulgated a regulation covering the situation in the region particularly affected by settlers' fires. This regulation provides that before any brush piles or slash, resulting from clearing lands, can be burned in the Hazen and Grimmer settlements, in the county of Restigouche, or on lands adjacent thereto, a permit in writing must first be obtained from the caretaker of said settlements, and due notice must be served on the adjacent land owner or occupier in accordance with sub-section 2 of section 3 of Chapter 94, C.S. 1908, under a penalty of not less than \$20 and not more than \$200.

The chairman of the Cape Town Chamber of Commerce, in an address to that body, said that 80 per cent of South Africa's exports consisted of gold, diamonds, and articles of luxury; that only five per cent of the land of the country was fit for cultivation; that the mines were a wasting asset; and that it behooves South Africa to turn its attention to agricultural and pastoral pursuits.

It is notable that many of the foremost advancements in hydraulic engineering have found their application and also their inspiration in Canada. Several very large power plants have been constructed and the many hydraulic plants approaching two million horse-power in aggregate capacity, have permanently established markets, while over eight times this amount is within reasonable zones of commercially economic development. The large cities of Canada are fortunate in being liberally endowed with adjacent water-power sources.

Commission of Conservation

CANADA

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CONSERVATION is published the first of each month. Its object is the dissemination of information relative to the natural resources of Canada, their development and the proper conservation of the same, together with timely articles governing town-planning and public health.

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OTTAWA, SEPTEMBER, 1915

The autumn hunting season brings its annual record of accidents. Safety in the woods and field should be the sportsman's first consideration.

Gasoline gives off a vapour constantly, and air which has mixed with it about ten per cent of gasoline vapour is more dangerous than gunpowder.

Many parts of Canada have been suffering this year from low water in lakes and rivers. This condition emphasizes the necessity for protecting the forest cover of the watersheds.

Conservation and propagation of bird life go hand in hand, and the forces of destruction, disease and shooting must be limited and regulated until a balance is reached that will show an annual healthful increase.

Stovepipes should be thoroughly cleaned of soot before being used in the autumn, not one as a precaution against fire, but because the soot acts as an insulation, and keeps the pipe cool. Instead of the heat radiating from a warm pipe, it is carried up the chimney and wasted.

The city of Milan, Italy, has undertaken a municipal renting agency, in order to supervise, to a limited extent, the hygienic living conditions among those occupying large workmen's homes. Before undertaking the renting of a property it is first inspected by the city officials and a report made as to its cleanliness and location.

NON-AGRICULTURAL LANDS

Optimistic as we have been in this country, we seem to have been unable to see any value worth caring for in our non-agricultural lands. Our vision was broad enough years ago, when we heard of agricultural lands in the Peace River valley, to recognize that such lands, while unused at the time, would within a decade or two grow crops and support a population. We can look across the future to the time when our far northern mineral deposits, though inaccessible and incapable of development at the present time, will develop centres of industry. But we travel daily across the non-agricultural, logged areas and burned-over lands which surround many of our most densely settled communities and lie across our transcontinent. Always and we see in such lands no asset. This attitude is both dangerous and unfair to the country. We must realize that our present stands of merchantable timber cannot support our growing industries indefinitely. The growing American demand for forest products, to which in a very few decades will be added a much greater market in Europe than now exists, will very rapidly wipe out our eastern merchantable forests. Even now, New Brunswick, speeded up by foreign markets, is cutting each year from Crown lands more than the annual forest growth.—H. R. MacMillan, at 1915 Annual Meeting of Commission of Conservation.

LOSSES BY FOREST FIRES

The total amount of standing timber in the United States is nearly 2,900 billion board feet. At least 76 per cent of this, or 2,200 billion feet, is privately-owned. About 21 per cent, or 600 billion feet, is in the National Forests. About 3 per cent, or 90 billion feet, is in some other form of public ownership—Federal, State, or municipal. The original stand of timber in the United States has been roughly estimated to have been 5,200 billion feet covering approximately 800,000,000 acres. Fire has destroyed at least as much of this as lumbering has utilized. As much again has been wasted.

The amount of merchantable saw-timber in Canada has been roughly estimated at 600 billion board feet, exclusive of a vast amount of pulp wood, the extent of which has not been estimated. Thus, Canada has probably between one-fifth and one-fourth as much timber as the United States. Undoubtedly, the amount of timber in Canada uselessly destroyed by fire is several times as great as the amount that has been utilized. However, the fire loss is being materially reduced by the exercise of greater precautions on the part of governmental agencies and of lumbermen. The outlook for the practice of forestry in Canada is

vastly improved by the fact that the fundamental ownership of a very large percentage of non-agricultural lands has been retained by the Crown, instead of passing into private ownership, as has so largely taken place in the United States. Very seldom can private landowners afford to hold cut-over forest lands for successive crops of timber. This is essentially a governmental function, on account of the long-time element involved.

Fish and the Cost of Living

As a Substitute for Meat, Fish Should be More Generally Used

"Eat fish" should prove a valuable slogan for combatting the high cost of living. Meat has risen in price steadily within recent years, and, strangely enough, the available supply is becoming less competent to meet the demand. It is not surprising, therefore, that fish should be looked to as a substitute. As a food it is excellent, comparing not unfavorably with meat, although the proportions of nutritive elements such as protein, albumen and fat differ considerably.

Heretofore, fish has not been a popular article of diet in Canada. The reasons for this are various and some of them must be removed before fish eating can become a national habit. In the first place, fresh sea fish in prime condition has been almost unobtainable even at points not far removed from the coasts. This has been due frequently, to inefficient handling of the fish by the fishermen and by the distributing agencies. It has also been due to unsatisfactory transportation and retail market conditions. These difficulties are not insurmountable, and some of them are already being overcome. Education of fishermen and others who handle fish is a necessity that cannot be much longer overlooked. Traditional methods of handling must give way to more scientific and efficient practices. Such changes would mean increased profits for the fishermen, and, at the same time, by making available large quantities of food which have hitherto been wasted, would improve the quality and lower the price to the consumer. Transportation is already being improved and, in time, when the inland demands for fish warrant it, fast train services should, and probably will, be established from the fishing ports to the larger inland centres. The present offers splendid opportunities to the fishery industry. A demand for fish is already half created by the high price and comparative scarcity of meat. But if Canadians are to be taught to eat fish, there must be more enlightened methods of producing and handling it.—A.D.

Ashes should not be placed near wooden buildings or fences.

Vacant Lot Gardens

Excellent Results Secured—Precautions Against Weeds Required

Reports from various cities and towns in Canada as to the cultivation of vacant lots indicate that the campaign inaugurated last spring for greater production and more extensive use of vacant land has been a success. Several cities have handled the vacant lot problem in a systematic manner, and have secured results commensurate to the amount of energy expended. Some, by allowing interest to lag, have been only partially successful. In others, also, circumstances militated against success, in that unemployed men took up the cultivation of vacant lots, and, upon securing employment, neglected them. On the whole, however, the movement can be regarded as a distinct success. No estimate of the value of the product is available, but, judging from the enthusiasm of some of the vacant lot gardeners, the total value is large.

There is one danger, however, to which attention must be drawn, namely, the growth of noxious weeds in the newly cultivated land. Too often, on the removal of the crop, the ground is given over to the weeds. Organizations handling the vacant lot work should give the matter of weed destruction early attention; otherwise, the lots will not only prove a menace to the land in the vicinity by the spread of weed seeds, but create antagonism to the movement on the part of the occupiers of the neighbouring land.

New Brunswick to Take Action

Survey of Crown Lands to be Proceeded With

The Government of New Brunswick has announced that in the near future, it will appoint a provincial forester and proceed with the survey of Crown timber lands, as provided for in the Act of 1912. The Crown lands comprise an area of over ten thousand square miles, or approximately one-third the total area of the province. The proposed action is entirely logical, in view of the fact that the province derives an annual revenue of over half a million dollars from these lands. A careful stock-taking, together with a thorough and scientific investigation of the questions of reproduction and rate of growth, will be required to determine the means necessary for the perpetuation of the forest and of the revenues resulting from its exploitation.—C.L.

The importance of safety should be impressed upon all employees whether new or old.

Treatment of Dusty Roads

Proper Construction and Use of Dust Laying Materials Only Solution.

The problem of dust prevention on our roads has gradually become more important during the last decade. That the dusty country roads have become an intolerable nuisance is now commonly acknowledged. In the larger centres the dust nuisance is not so evident as it is in the country simply because preventive means are more accessible and more generally utilized.

It is obviously futile to anticipate any relief from the dust nuisance through a decrease in traffic. On the contrary, the number of vehicles is steadily increasing. The remedy, therefore, must be in the form of some method of curing the defects in the roadway.

Real dust prevention begins with the construction of the road crust. In this work it is necessary to minimize the subsequent production of both superficial and internal dust—the latter rising eventually to the surface—by selecting road metal of a hardness appropriate for the traffic, by providing drainage for the removal of excessive water from the road crust, and by securing in the macadam the firmest angular bond that the metal permits.

Regardless of its construction, any roadway, even in city streets, may become superficially dusty and require some means of suppressing the dust on its surface.

The simplest method is sprinkling with water "to lay the dust." This method is not entirely free from objection. As the sprinkling must be done periodically it is seldom done efficiently and between the times of sprinkling—when there is a temporary excess of water—the surface condition varies from muddy to dusty again.

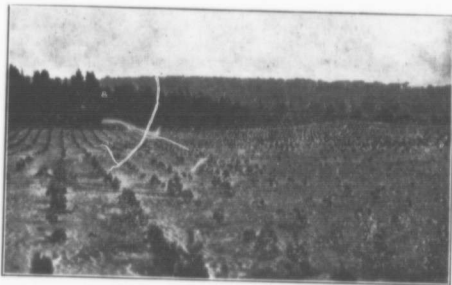
The second process, chemical in character, consists in the use of concentrated sulfolite liquor, usually produced as a waste or by-product at wood-pulp mills, and commercially known as "glutrin." The glutrin is used either with or without water and its effects are composite. It has cementing powers and acts chemically on the road materials, strengthening their binding qualities. The glutrin is, however, more or less soluble in water and eventually will be washed out of the road crust.

The most successful, for either the prevention or suppression of dust on roadways, are the bituminous materials. No general definition can be given regarding what constitutes the proper bituminous material. In each case that will depend largely upon the local conditions. Broadly speaking, it may be said that the as-



Cut 108

Beach grass planted by the Provincial Forest Service upon the sand dunes near Lachute, P.Q. Note, at the right of the picture, how the grass in the rows has begun to grow together by means of root suckers. In a few years the surface will be well covered and the shifting of the sand by the wind will have been stopped, at the work pay for itself, through the careful harvesting of mature trees, leaving enough standing to hold the sand in place. At the same time the gaps will be filled that if trees had been planted at once, they would either have been buried or the roots uncovered through the rapid movement of the sand. Forest plantings on sand dunes in France, under similar conditions, has proved a great financial success.



Cut 109

Plantation of white pine and Scotch pine made in 1911, by the Provincial Forest Service, on the sand dunes near Lachute, P.Q. This work will stop the consequent destruction of valuable farming lands through being covered with sand. This work will in time pay for itself, with a profit, from the sale of timber.

phalic oils are better for this work than the paraffin base oils.

The non-volatile oil will quickly penetrate the wearing surface of the road, incorporating itself with fine particles, so that it forms a dense, smooth, water-proof coating, or else renders the surface dressing so heavy that the winds will not hold it in suspension in the air. Moreover, its non-volatile character should give it lasting qualities in order to impregnate whatever dust may blow or be carried upon the road already treated.

Forest Planting

Laurentide Co. Carrying out Aggressive Reforestation Policy

The Laurentide Company, Limited, has inaugurated an aggressive policy of forest planting upon lands which it has purchased, in the vicinity of its pulp and paper mill at Grand Mere, P. Q. To a considerable extent, these are lands previously cleared for cultivation but found, upon trial by the set-

ters, to be unsuitable for agricultural purposes. About four hundred acres have already been planted to trees, mostly Norway spruce, with some Scotch, white and red pine. The oldest of these plantations was made in 1913 and all have been successful. The only failure has been in fall planted red pine. The Scotch pine has made good growth and the white pine has started well. With the Norway spruce there has been less than 5 per cent loss and they have begun to grow nicely. These plantations are guarded by fire lines and roads and a special ranger is kept on duty continuously from snow to snow. The nursery has been enlarged to produce one million trees per annum and this output will mean the planting of practically a square mile a year. It is expected that by the time the trees reach suitable size to be thinned for pulp wood, the company will have a reserve of cheap wood within six miles of the mill. If this project is carried out, it will be the first of its kind on the continent.

Waste Due to Smoke Nuisance

Action Must be Taken to Prevent Pollution of Atmosphere

A source of fuel waste is represented by the smoke nuisance which is becoming very pronounced in our large cities. While it is difficult to prevent the smoke arising from the chimneys of private dwellings, this, in the cities of Canada, is relatively unimportant, for, as a rule, hard coal is burned for domestic purposes. On the other hand, the immense volume of smoke emitted from the stacks of many of the great power plants and factories of our large cities, as well as by locomotives and steamboats, can be greatly reduced or stopped by the installation of reliable smoke consumers, operated by firemen instructed in the proper use. Investigations show that in many cases such plants not only stop the smoke but pay the owners.

The waste of fuel, however, but a small part of the loss entailed by the smoke in our cities. It disfigures buildings, impairs the health of the population, renders the whole city filthy, destroys its beauty with which it may be naturally endowed, and tends, therefore, to make it a squalid and undesirable place of residence; that at a time when economic influences are forcing into our cities an ever increasing proportion of our population. These conditions pre- especially on the poor, who must reside in the cities and cannot escape from these evils by taking houses in the suburbs. After all the conservation of humanity is even more important than the conservation of coal.

Investigations into the best means of abating the smoke nuisance have been, and are now being carried on by government and municipal commissions in several private individuals, as well as in the leading countries of the world. Many cities have officials whose time is devoted exclusively to the education of public opinion and the enforcement of a existing laws with reference to this matter. The question as to what steps can best be taken to lessen the amount of smoke which is being discharged into the atmosphere in our Canadian cities is by no means a simple one, but the time has come when the Commission of Conservation may very properly make a thorough investigation of the question and ascertain for the benefit of the dwellers in our great cities what can be done to prevent the wholesale pollution of the atmosphere.—Dr. Frank D. Adams at 1915 Annual Meeting of Commission of Conservation.

Whitewash is cheap and it is one of the best fire retardants that can be used on buildings or rough woodwork.