Dust from Motors Is Objectionable

Tar, Oil and Other Palliatives May Be Used To Abate The Dust Nuisance

With the return of warm weather, the motor enthusiast brings forth his automobile from the garage, and hies him to the public park to enjoy the delights of speeding. Those who go thither to admire the opening blossoms and to feast their eyes on the fresh green of the shrubs and trees, are often disgusted to find the vegetation wrapped in a pall of grey dust that effectually shrouds its beauty, and that may, indeed, be positively injurious. On city streets and country lanes, pedestrians and horses have their lungs and eyes filled with dust by the frequently passing motors, which, even if they be not the cause of it, are, at all events, the chief agent in its dispersion. Since the automobile has come to stay, the remedy is to improve the roads so that the dust nuisance may be, if not prevented, at least abated. Considerable progress in this direction has been made of recent years.

The ordinary method of watering the streets is unsatisfactory, because water sprinkled on a hot surface in July evaporates almost as quickly as it falls. Other palliative treatments that have been tried are the use of calcium chloride, oil emulsions, and petroleum oils with paraffin base

Dust is, it must be remembered, a necessary bonding material for the stone composing the road, and its scattering by motor traffic is a serious injury to the road itself. Therefore, to meet future requirements, roads must be constructed with a tougher surface that will resist wear and not 'unravel' so easily as roads of the ordinary type. Asphalt and asphaltic oils as binders are being extensively experimented with in the United States, while the use of tar has been adopted as standard practice in England and Scotland. It is essential to success with tar that it should be of uniform quality, and should be refined by heating to drive off volatile oils. Creosote and pitch are often added. The Ottawa Improvement Commission report that the use of a grade of refined tar has been attended with success. Other special materials which may be mentioned are glutrin, which is a bye-product in the manufacture of wood-pulp, and is used for spraying. An emulsified asphaltic oil is used, and another, a liquid compound, when mixed with powdered limestone, produces silicate of lime on exposure to the atmosphere. All these materials are as yet in the experimental stage, but up-to-date and progressive road authorities will not be averse to experimenting with promising materials, for only by practical tests can they discover the kind of road which is specially suited to their local requirements.

Fire Prevention in the Mines

Education Plays An Important Part —Fire Proof Construction of Buildings

Disastrous and destructive mine fires have had their origin in a majority of cases in causes of a trivial nature. Where proper safety regulations are enforced and proper equipment is at hand for fire fighting, such fires might be quickly extinguished if not prevented altogether.

The agencies for fire prevention and fire fighting should, however, be clearly separated, and the first measure necessary in connection with the former is education. Teach the miner and his children the danger of carelessness in using inflammables; point out the perils which lurk in the casual use of non-safety matches, the throwing away of cigarette butts, the careless handling of lighted candle-stumps and lamp-wicks, and the preventible fire might soon become a memory of the past. The second measure in connection with fire prevention embraces the matter of fire-proof construction, and in this connection the stable or the underground engine room should first demand attention. It is economically possible to construct stables which will be to a very large extent fireproof, and the same thing applies to the engine room. Even where it is necessary to lay wooden floors in the stable stalls, these can be so imbedded in concrete as to be rendered practically fire-proof.

In the mine itself fire-proof materials should be used as much as possible. The shaft lining should undoubtedly be of fire-proof construction, and the use of concrete in shafts and main haulage ways opens up a large field for experimental work. Data can be adduced to show that a permanent fire-proof shaft lining is, after a period of fifteen years, cheaper than timber lining. In connection with mine timbers, also, the use of concrete and steel offers advantages over the wood, although concrete has certain disadvantages which sometimes render it unsuitable. The use of steel for this purpose, however, is gradually increasing.

Fire-proof construction in mines will undoubtedly grow rapidly in favour. The increasing strictness of workmen's compensation laws, the awakening of public sentiment, and lastly the increasing relative cost of wooden timbers as compared with steel and concrete, all point to the fact that fire prevention will, in the future, receive more attention than it has in the past.

The fire loss in Canada for the year 1912 amounted approximately to $23,000,000 or a per capita loss of $3.07. To this must be added a per capita cost of maintaining fire brigades, of $1.25, making a total tax of $4.32 per capita. The number of lives lost as a direct consequence of fire amounted to 203 for the same period.

New Light on the Culture of Oysters

Scientific Research Suggests Possibility of Increasing Production

In the life of an oyster a metamorphosis takes place as wonderful as the familiar changes in the history of the butterfly. In the oyster's case, however, the change would appear to be for the worse, for, while the adult is a helpless inert creature, the larva can swim and creep, and possesses many organs lacking in its later life.

There are three important events in an oyster's existence, spawning, swarming and spatting. In Canadian waters the first takes place about the second or third week in July. After fertilization of the eggs, and after passing through the embryonic stages common to all animals, swarming takes place, i.e., the oysters develop into active free-swimming larvae, occurring in large numbers near the surface of the sea. Specimens may be captured by dragging a net made of fine-meshed, silk bolting-cloth behind a boat in the neighbourhood of oyster areas. This larval stage lasts for about three weeks. Towards the end of the period, as the shell grows heavier, the larva sinks more frequently to the bottom, where it moves by a creeping organ known as the foot. Eventually it attaches itself to some solid object, as a rock or shell, by means of a cement secreted by a gland in the foot, which is long enough to reach out and apply the cement to the proper place. The attachment is always on the left side. The spat, as it is now termed, is still very minute, about 1/70 of an inch in length. The swimming apparatus (velum) and the foot, being now no longer needed, disappear. The spat grows rapidly and soon becomes recognizable to the naked eye as a young oyster.

'Spatting' is a process of great importance to the oyster culturist. If he can accurately gauge the time when it will occur, he can render great assistance to the young oyster by putting out shells, stones, brush, glass or other cultch, and thus providing the spat with a clean surface to adhere to. At present, gauging the time of spatting is mere guess-work. If the cultch is put out too soon, it gets slimy; if too late, the time of spatting is over; in either case, the result is a poor set of spat. Perhaps, indeed, the labour and expense of preparing and putting out cultch may represent a total loss. The problem is to find some method of exactly determining for each year and each situation just when spatting will take place.

Prof. Stafford, of McGill University, who has devoted many years of his life to the study of shellfish, claims to have discovered such a method. It is simple in principle, but would require some technical knowledge to apply. All that is necessary is to follow the development of the larva through the swimming stage by making frequent catches with the bolting-net as above described; examination with a microscope will then show when the time of spatting is at hand. The difficulty arises in distinguishing oyster from other similar larvae. It would be necessary for the Government to send round experts to teach the oyster fishermen how to do this with certainty. Tests should first be made to prove the practicability of the method, and, should this be placed beyond all doubt, a microscope may become an indispensable part of the up-to-date oyster culturist's equipment. In this way thousands of dollars would be saved annually, and the culture of oysters be placed on as sure a basis as raising stock or rearing poultry.

An Extension of Western Reserves

Forest Reserve Areas Are Increased by the Addition of 11,000 Square Miles of Territory

By Act of Parliament, near the close of the last session, the area of Dominion Forest Reserves was increased from about 25,000 square miles to nearly 36,000 square miles. This action was taken upon the basis of reports prepared by the Forestry Branch of the Department of the Interior. A large number of field parties had been engaged in securing the necessary data preliminary to this action. During 1911 the Commission of Conservation took an active interest in the establishment of the Rocky Mountains Forest Reserve, and assisted materially in securing the large addition which increased the area of Dominion forest reserves from less than 3,000 square miles to about 25,000 square miles. The new additions, like the original reserve areas, are scattered throughout the forest sections of Manitoba, Saskatchewan and the Railway Belt of British Columbia.

Practically all of this land is reported as being non-agricultural and chiefly valuable for the production of timber. On much of it, fires have caused extensive damage, so that the amount of merchantable saw-timber over considerable areas is relatively small. However, in addition to the saw-timber, which in the aggregate amounts to a good deal, there is a large amount of pulpwood and a vast area of young growth which, if protected from fire, will become of merchantable size. The relative accessibility of a great deal of this timber land to the new settlements in the Prairie provinces makes reservation and protection tremendously important.—C.L.

In Fort William and Port Arthur they conserve daylight. The 'Twin Cities' are geographically in the Central Time belt, but use Eastern Standard, which is one hour earlier.