

## How to Conserve Supply of Gasolene

Supply is Failing to Meet Heavy Demands. Practical Methods for Motorists

About 29 per cent of the gasolene we use is produced from Canadian crude oil, while the remainder is either imported or is produced from imported crude oil. For both petroleum and gasolene we are largely dependent upon the United States. There, the consumption of gasolene is greater than the production, the excess being drawn from the surplus production of earlier years, and the greater demand, for war purposes, in 1918, will inevitably result in a greater consumption than formerly. At the same time, while the production of gasolene in the United States in 1917 will probably be less than in 1916, it is estimated that the consumption this year will exceed production by 60,000,000 barrels. This enormous deficiency must be drawn from the surplus of 150,000,000 bbls. that was in storage on January 1st, 1917.

In view of this situation and its effect on Canada, together with the necessity for conserving gasolene for war purposes, it behooves us to prevent waste, or needless use, to encourage the use of substitutes, and, if economically possible, to develop the oil shale industry in Canada. One-half of the gasolene used in the United States is used in pleasure riding, and doubtless the same proportion holds good in Canada.

To economize gasolene, the Director of the United States Bureau of Mines suggests the following to automobile owners:

(1) Do not allow your engine to run idle; (2) Use kerosene, not gasolene, for cleaning purposes in the garage; (3) See that the carburettor does not leak, and form the habit of shutting off the gasolene at the tank; (4) By judicious regulation of the mixture of gasolene and air in the motor, both greater power and economy of fuel may be obtained. Automobile owners need not lay up cars, but should use them either for trade or pleasure purposes thoughtfully and judiciously.—W.J.D.

## CANADIAN DESIGNS FOR INDUSTRIAL PURPOSES

The war has cut off the supply of designs from Europe on which Canadian manufacturers depended and the Geological Survey is making an effort to develop a distinctively Canadian productive art, using as a basis the designs of Indian pottery, and also designs from our fruits, leaves, fossils, flowers and animals. Various museums scattered throughout Canada

furnish a wealth of material from which to adapt designs and manufacturers are taking a keen interest in the movement. There are 175 Canadian industries using ornamental designs in the manufacture of their products. Some of the products in which these designs figure most prominently are rugs, pottery, china, book covers, wall paper, fountains, lace, embroidery and jewellery.—Harlan I. Smith.

## Danger from Fire In Picture Theatres

Nearly One-Third Are Of Frame Construction. Conditions Are Being Bettered

During the last five years, the moving picture theatre has become one of the leading sources of amusement. It is estimated that more than 500,000 people attend such theatres every day, and it is important, therefore, that every possible precaution be taken to ensure their safety. As a rule, women and children largely predominate in the audiences, and, in the event of panic, the danger is, therefore, at a maximum.

Over 29 per cent of the existing moving picture theatres in Canada are of frame construction. In 92 cases, families are living above theatres with stairways as the only means of escape in the event of fire. The actual figures are given in the table below.

The existence of so large a percentage of frame buildings is starting when the hazards connected with moving picture theatres are considered, but the fact is capable of simple explanation. While the moving picture business was still in the experimental stage, promoters were uncertain as to the profits that might be expected, and hence they were unwilling to risk large sums of money in sound construction. Many theatres were erected hastily and cheaply, and, in some cases, with little consideration for the question of safety. At the present time, statutes regulating the construction of theatres and providing for the safety of the patrons are in effect in all the provinces in Canada, and these are supplemented by municipal ordinances.—J.G.S.

## STEEL PRODUCED FROM HYDRO-ELECTRIC ENERGY

The electrical production of such products as fine steel, calcium carbide, carborundum and other substances requiring high heat, is growing, and will undoubtedly utilize an increasing share of the electric energy derived from Ontario's water-powers.

The high prices now prevailing for coke and coal and for steel products make the electric furnace very attractive, and there is every indication that electric steel production in Ontario will grow rapidly during the next year or two. It is anticipated that the electric furnace will not only be applied to the production of high-speed tool steels, but that it will also be used to smelt the coarser grades now produced in the open-hearth furnace. There is also every indication that electric smelting of iron, copper and other ores will be an important factor in the mining districts of the province.

The British Forgings, Toronto, has installed ten electric furnaces of a capacity of 6 tons per heat each, or an annual capacity of 72,000 tons. This is the largest electric steel plant in the world, and uses electric energy generated at Niagara Falls. This, therefore, furnishes an additional reason why our water-powers should be kept under public control to ensure power to industries at the lowest possible cost.—L.G.D.

## Conservation Defined

Conservation means the greatest good of the greatest number and for the longest time. It requires the right thing to be done at the right time in the right manner by the right person and brings the right result.

It must be regarded from a national viewpoint. The individual, through ignorance, does not usually conserve natural resources, hence needs education to discover many new ways of conserving all natural resources, including the human, to greater degree than now.—President Van Hise, University of Wisconsin.

MOVING PICTURE THEATRES IN CANADA

Cities and towns	Brick theatres	Frame theatres	Dwellings over theatres
Exceeding 10,000 population	338	27	26
5,000 to 10,000 population	59	31	15
1,000 to 5,000 population	115	109	27
Under 1,000 population	28	57	24
Total	540	224	92

## Problems in Using Low-Grade Fuels

High Price of Better Grades of Coal Compel Use of Lower Grades

The plants in Canada which are steam to generate electric energy are faced with difficulties owing to the present high prices and poor delivery of the grades of coal which heretofore have been most popular for steam-producing purposes. The problem is not so much to secure the largest number of kilowatt-hours per pound of coal as to determine the fuel that can be utilized without making any changes in the existing equipment, and to provide for its continuous delivery. Many other industries besides electric plant could profit by ascertaining the low-grade fuels available for the use, and, if necessary, so modifying their equipment that they could use it.

Many types of low-grade fuels being successfully burned, such as soft coal with high ash content, bone coal, culm, lignite, etc. Before changing to the lower grade of coal, however, each company should first determine the method whereby they will solve the problems involved in utilizing it. These problems include a reduced steam output from the same grate surface, additional moisture in fuel, clinkers, draft and the fuel of firebrick.

Electric companies now using lower grades of fuel than heretofore find it advantageous to cooperate with the mines in securing a full supply of coal in the summer when the mines have an ample supply on hand and the railways are in the best position to handle it.—L.G.D.

## WAR HAS DEVELOPED MOLYBDENUM PRODUCTS

The demand for molybdenum in use in the manufacture of special steels has greatly stimulated prospecting and development of molybdenic resources. Numerous discoveries have been made which vary in importance from minor mineral occurrences to deposits which have already given considerable production. The most important deposit yet proven is the near the village of Quyon, Quebec.

The Federal Department of Mines has done much to encourage the concentration of these ores. After trial shipments had been made for test runs in the United States, the ore from Quyon was principally sent to the concentrating plant of the Mines Bureau. The company has recently completed a concentrating plant and take care of their output.