

WOODLOTS AND THEIR VALUE.

By proper utilization a permanent fuel supply is assured.

Woodlots on the farms can be made an important factor in the relief of the threatened fuel shortage. Farmers and the residents of smaller towns and villages situated within hauling distance of woodlots, should, as a measure of practical patriotism, use wood in preference to coal.

Few farmers realize the value of the crop which can be obtained from their woodlots. If even a small proportion of the attention given to other crops were devoted to the protection and improvement of the "bush," a good financial return could be secured. Aside from its value in affording protection against wind and storms, its importance in the conservation of soil moisture and its aesthetic value, the woodlot has a considerable value for the crops which can be harvested from it every year at a minimum expense. It should have a place on every farm.

Live stock should be excluded, as they destroy the natural reproduction, injure the larger trees and pack the soil so that the growth of the trees is retarded. Defective and diseased trees should be removed first; then those of poor form, such as very crooked or very branchy ones, which interfere with the growth of better formed neighbours. The trees of the less valuable species such as dogwood, ironwood and hornbeam should then be removed. Every effort should be made to secure natural reproduction, but, if that be impossible, planting will be found profitable.

The tendency has been to encourage the growing of soft-woods suitable for lumber, such as pine, spruce and cedar, but the function of a farmer's woodlot is better fulfilled by producing hardwoods for fuel.

The fuel value of one cord of several of the common kinds of wood is equal to the following quantities of anthracite coal:

Hickory and hard maple, 1,800 to 2,000 lbs. of coal; white oak, 1,540 to 1,715 lbs. of coal; red oak, black oak and beech, 1,300 to 1,450 lbs. of coal; poplar, chestnut and elm, 940 to 1,050 lbs. of coal; pine, 800 to 925 lbs. of coal.

Therefore, hardwood is worth, to the owner of the woodlot, from \$6.00 to \$9.00 per cord, as compared with coal at \$10 per ton, plus the cost of hauling it out to his farm.

If a yield is to be sustained permanently, it should not exceed the annual growth which, in unmanaged woodlots, probably does not exceed $\frac{3}{4}$ cord per acre. This production can be considerably increased by careful management. A woodlot may be considered as similar to a savings' bank account from which the annual interest, represented by the growth, may be taken out or allowed to accumulate. In the case of the woodlot, however, the withdrawals can be so made as to greatly benefit the condition of the stand and improve its productivity.

The Dominion Forestry Branch and the various provincial forestry organizations have done much to encourage farm forestry by supplying advice and assistance. The Dominion Government distributes annually between 3,000,000 and 3,750,000 seedlings and cuttings among the farmers of the prairie provinces. In Ontario, the Forestry Branch of the Department of Lands, Forests and Mines also supplies seedlings for planting in farmers' woodlots.—Conservation.

THE DIESEL ENGINE.

Once the United States Shipping Board gives its sanction to the Diesel engine for its new ships, it will become as popular a topic as wooden ships. Meanwhile, it is vague to the non-technical man. A Diesel, once started, needs no attention, and has perpetual motion while oil lasts. Air is compressed in a cylinder head to about 500 pounds to the square inch. Action of compression generates heat of about 1,000 degrees Fahr. Crude oil is then forced into cylinder by compressed air at a pressure of about 700 pounds. As oil is blown into the cylinder it is pulverized and enters as a cloud. When the oil comes in contact with hot air, combustion takes place. This burning lasts for 10 per cent. of the stroke, with relative increase in pressure, after which there is increased expansion, giving stroke full effectiveness. There is no sudden expansion, as in gasoline engines. Action can be either two or four cylinder. The engine is started by compressed air from previous runnings stored in iron bottles, after which air compressing is a function of the engine. The crudest oil can be used.

U. S. SHIPBUILDING PLANS.

Shipping contracts aggregating 775,000 tons, and an outlay of \$100,000,000, drawn up by Gen. Goethals, but held up until Admiral Capps could study them, have been approved by the Shipping Board. The tonnage includes 88 wooden vessels and 60 steel ships. Only slight changes were made in the contracts by Admiral Capps.

REAL "GAS."

In view of the high price of petroleum, substitution of coal gas for gasoline as motive power for automobiles is being successfully tried in London by motor busses. A flexible collapsible holder, consisting of a simple canvas sack made gas and water tight by being covered with rubber insertion, is strapped to the roof of the vehicle. Inlet and outlet system is controlled by an ordinary stopcock. The motor busses, which weigh $3\frac{1}{2}$ tons, under ordinary conditions carry around 70 passengers, making a total load of approximately nine tons. Gas consumption under these conditions average 350 cubic feet for a 12-mile run.

CANADA NOT TO HOLD CARS.

After conference between C. A. Magrath, fuel controller, and Sir Henry Drayton, chairman of Canadian railway commission, drastic orders have been issued compelling rapid unloading and return of coal cars to the United States. Fuel controller had pointed out that delay in returning cars would interfere seriously with supply of coal necessary for munition plants.

Importers will have two free days for delivery, and on third day there will be a demurrage charge of \$1 per car, which increases \$1 a day until charge reaches \$5 a day, the maximum demurrage.

TRANSPORTATION IS CHEAP.

As indicated by the purchasing value of commodities, says R. J. Clancy, of the Southern Pacific Company, railroad transportation is now approximately 50 per cent. cheaper than three years ago, and in this time of soaring prices and increased cost of living, is probably the only product relatively speaking, that has decreased in price.

"A bushel or sack of wheat, corn or barley, a bale of cotton or wool, a barrel of pork or flour, a ton of copper, iron or steel," he says, "will buy approximately double the amount of railroad transportation it would three years ago. This, too, regardless of the fact that during the last three years wages of railway employees and cost of capital have greatly increased, along with an increase of 100 per cent. in cost of fuel oil for locomotives and an increase of from 50 to 500 per cent. in the cost of railway equipment and material."

PROFITS IN SCHOONERS.

So great is the demand for tonnage to the eastern hemisphere that freight rates have advanced 200 to 400 per cent. the past year, and many shippers say it is impossible to charter ships. "The next best thing," said a Wall Street banker, "is to buy schooners, and that in itself is profitable at present. Recently a man came to me almost in desperation. He wanted \$75,000 for about three days. He had an option on the purchase of a schooner of 1,200 tons, and wanted to complete the purchase by payment in full. He had agreed to pay \$86,000, did not know whether the vessel was worth more or less than that sum, but wanted the space, and that was the only way he could get it. He also told me he had an outward bound cargo to fill his space at \$65 a ton, and wanted the space to bring home from West Africa his own mahogany which otherwise would cost him about \$54,000 for freight, and he could not tell when he might be able to get the space.

"The bookkeeping transaction showed: Credit outward bound cargo, \$65,000; homeward bound cargo, \$54,000; total, \$119,000. Deduct cost of schooner, \$86,000; cost of getting money advanced, \$150; insurance, labor and provisions, say \$15,000, total \$101,150; profit on round trip, \$17,850, plus cost of the schooner. This man actually had these transactions. He paid back \$37,500 of the amount I advanced to him, on the next day, Saturday, according to agreement, and the balance the following Monday. All of which goes to show that there is a profit in purchasing schooners."—Wall Street Journal.

QUEBEC'S REVENUE.

The Hon. W. G. Mitchell, Provincial Treasurer, announced at the Government offices that the ordinary receipts of the province for the fiscal year ended the 30th June, 1917, amounted to \$10,441,113.71, and that the ordinary and extraordinary expenditure for the same period amounted to \$9,907,673.10, so that the surplus of ordinary revenue over ordinary and extraordinary expenditure last year is \$533,440.61.

Out of the surplus was paid the sum of \$375,000, to the Canadian Patriotic Fund, during the year, on account of the subscription of \$1,000,000 of the province, authorized at the last session of the Legislature.

The surplus over and above all ordinary and extraordinary expenditure and payments on account of the Canadian Patriotic Fund is \$158,440.61.

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