for a definite point generation after generation will, no doubt, bring the desired results no matter what breed is chosen, but care should be exercised that excellency in one point is not secured at the expense of another.

THE FARM.

Canada's War Finance.

Since the people of Canada have been urged to invest in Government securities and thus assist in meeting the ever-growing financial obligations of this country, we all become more or less interested in domestic financial matters, for even the day laborer and others with very limited means have purchased Victory Bonds or War Saving Certificates, feeling that by so doing they could render a service to the nation in time of stress. In this manner a large number who could otherwise never be classified in the capitalist or investor category became bond holders, and consequently interested in money matters as they concern the Dominion. The Department of Public Information has issued a booklet dealing with Canada's war efforts, and from this we reproduce the following resume of the financial situation:

Government Loans.

The Canadian Government, since the commencement of the war, has issued domestic loans as follows:

	Amount Subscribed	No. of Subscribers
1. 1915-1925, 5%	$ 97,000,000	24,862
2. 1916-1931, 5%	97,000,000	34,526
3. 1917-1937, 5%	142,000,000	41,000
4. 1917-1937, (Victory Loan), 5½%	398,000,000	820,035

In addition, War Savings Certificates to the amount of approximately $12,500,000, as well as a considerable amount of debenture stock, have been sold, bringing the Government's borrowings from the people of Canada since the beginning of the war to the total sum of $756,000,000, or in other words, $100 per capita of the population of the Dominion.

In addition to the domestic loans, Canada has issued between the years 1915-17 in Great Britain and in the United States, securities totalling more than $307,000,000.

Advances Between the Dominion Government and Great Britain.

Since the outbreak of war to March 31, 1918, Canada has established credits on behalf of the Imperial Government to the amount of $532,816,397. Through these advances Great Britain was able to finance the purchase of foodstuffs, hay and other commodities and to carry on the operations of the Imperial Munitions Board in Canada.

In addition to the above, Canadian chartered banks have advanced to the Imperial Government through the medium of the Minister of Finance the sum of $200,000,000 for the purchase of munitions and wheat. This was made possible by the large savings deposits in Canadian banks, which since August, 1914, despite the withdrawals for subscription to war loans, have increased by $276,000,000.

On the other hand, Great Britain has made advances to the Dominion totalling $534,450,826. These credits were chiefly for the maintenance of the Canadian troops overseas.

Revenue and Expenditure—March 31, 1914–March 31, 1918.

	Revenue	Expenditure—Consolidated Fund
1914-15	$133,073,481	$135,523,206
1915-16	172,147,838	130,350,726
1916-17	232,701,294	148,599,343
1917-18	261,125,459	179,853,534

The Consolidated Fund expenditure for 1917-18 includes payment of interest, estimated at $45,000,000 and pensions of some $7,000,000, or $52,000,000 altogether, whereas prior to the war the outlay on interest was but $12,000,000 and on pensions practically nil.

	Expenditure, Capital Account	Expenditure, War Account
1914-15	$41,447,320	$ 60,750,476
1915-16	38,566,950	166,197,755
1916-17	26,880,031	306,488,814
1917-18	43,536,563	342,762,687

Sudbourne Senora
A good type of the large black breed

Up to March 31, 1918, the total outlay for the war was approximately $875,000,000. This amount includes all expenditures in Canada, Great Britain and France, and is also inclusive of the upkeep of the troops overseas. During the past two fiscal years there has been applied to war expenditures, by way of surplus of revenue over ordinary and capital outlays, the sum of $113,000,000. The interest and pension payments attributable to the war amount for the entire war period to approximately $76,000,000. These also have been provided from the Consolidated Revenue Fund.

Net Debt.

The net debt of Canada, which before the war stood at about $336,000,000, has now passed the billion-dollar mark, and it is estimated that when the accounts for the year 1917-18 are closed, it will reach, approximately, $1,200,000,000. The increase is almost entirely attributable to war expenditures.

War Taxation.

Taxation on luxuries has been gradually introduced since the beginning of the war as it was justified by the financial condition of the country. Increased customs duties and higher rates of excise on certain commodities, including liquors and tobacco, imposed soon after the commencement of the war were followed in 1915 by a war tax on transportation tickets, telegrams, money orders, cheques, letters, patent medicines, etc. In 1915 an increase of 7½ per cent. ad valorem to the general tariff and 5 per cent. ad valorem to the British preferential tariff was made on all commodities with the exception of certain foodstuffs, coal, harvesting machinery, fisheries equipment, etc.

In 1918 a special customs duty was imposed on tea and coffee, and the excise on tobacco was increased. In addition, various other taxes were imposed or increased, and a special war excise tax was imposed on various articles, including automobiles, jewellery, etc.

Under the Business Profits War Tax Act, as at present amended, the Government, in the case of all businesses having a capital of $50,000 and over, takes 25 per cent. of the net profits over 7 per cent. and not exceeding 15 per cent., 50 per cent. of the profits over 15 per cent. and not exceeding 20 per cent., and 75 per cent. of the profits beyond 20 per cent. In the case of businesses having a capital of $25,000 and under $50,000, the Government takes 25 per cent. of all profits in excess of 10 per cent. on the capital employed. Companies employing capital of less than $25,000 are exempted, with the exceptions of those dealing in munitions or war supplies.

The Canadian income tax, which comes into effect in the year 1918-19, is in many respects higher than that in force in the United States. The scale provides for the exemption of incomes, in the case of unmarried persons with an income of $1,000 and under, and in the case of married persons with an income of $2,000 and under. There is also provision for the exemption of $200 for each child. The present scale of income tax is shown by the following table:

Income (Married Persons)	Tax	Income (Married Persons)	Tax
$ 3,000	$ 20	$ 200,000	$ 50,957
6,000	140	400,000	142,757
10,000	392	500,000	195,407
20,000	1,382	600,000	248,057
30,000	2,702	800,000	366,857
50,000	5,782	1,000,000	499,157
75,000	11,007	2,000,000	1,228,157
100,000	17,607		

During the last fiscal year the Dominion Government collected by way of war taxation the following (in approximate figures):

Tax on Trust and Loan Companies	$ 267,500
Tax on Insurance Companies	385,000
Tax on Banks	1,115,500
Inland Revenue from Railways, Steamships, Telegraph and Cable Companies, etc.	2,230,000
Extra Postage on Letters, etc.	5,800,000
Business Profits War Tax	21,275,000
Increased Customs Duties	45,000,000
Total	$76,073,000

Gold Shipments.

Reference should be made to the fact that since the outbreak of the war quantities of gold coin and gold bullion to the value of $1,300,000,000 have been received at Ottawa by the Department of Finance as trustee for the Imperial Government and the Bank of England.

Automobiles, Farm Machinery and Farm Motors.

Carbon Deposit.

What is termed "carbon deposit" on piston heads, cylinders, valves and spark plugs, may be due to the following causes:

Incomplete combustion which is generally brought about by an incorrect mixture of fuel-vapor and air, due to badly adjusted carburetor.

Faulty timing of valves and unsuitable fuel will also cause incomplete combustion in the cylinder if the muffler, or silencer, is clogged, or the exhaust is retarded by too small exhaust valves.

The magneto breaker, which makes the spark, should be timed to ignite the compressed fuel charge with piston in correct position on compression stroke. Otherwise, the combustion will be incomplete and carbon deposit will result.

Road dirt or dust is drawn through the air intake of the carburetor into the cylinders and forms a base to which any excess quantity of lubricating oil will readily adhere. The soot or carbon resulting from imperfect combustion then has a foundation on which to build. In time the deposit will increase so that pre-ignition will take place, caused by the flowing carbon; knocking of the engine will result. The valve seats will become coated, preventing the valves from seating properly with a resultant loss of power.

If carbon deposit results after the use of a properly selected high grade oil, it is due to the oil passing the piston rings and reaching the top of the piston, where it is burned. This may be caused by ill-fitting piston rings; worn cylinders over-fed with oil by too great an oil pressure; abnormal supply to the wrist pins in full force feed system; or the oil level being too high, where the splash system is employed.

Lubricating oils of different characteristics deposit carbon of different natures. In the selection of an automobile engine lubricant, the use of a high grade oil of correct body is a very important factor.

A black exhaust indicates incomplete combustion.

A blue exhaust indicates the burning of oil which has passed the piston rings and worked into the combustion chamber.

Faulty valve action or defective ignition, resulting in incomplete combustion, or skipping permits the accumulation of oil on the piston head; this oil is burned when combustion next takes place.

When the engine is working with the throttle almost closed, as in coasting, or when the car is at rest with the engine running, a partial vacuum forms in the cylinders, particularly on high compression engines, sucking the oil on the cylinder walls up past the piston rings. Invariably, the blue smoke exhausted after coasting, or standing with engine running, indicates burnt oil due to the above causes. The result is the formation of carbon deposits in the combustion chamber.

Excessive carbon deposits in the cylinders cause the piston rings to stick in their recesses, resulting in abnormal wear of pistons, piston rings and cylinders, and loss of power. Deposits on the valve seats prevent the valve from seating properly with consequent loss of power.

An exhaust valve, seating improperly, not only will cause loss of power through the loss of compression, but, in a great many cases, will permit the suction, caused by the piston in its downward stroke, to draw in particles of incomplete combustion from the exhaust pipe.

When the carbon deposits inside the combustion chamber become heated to the glowing point by the burning of the fuel charge, the compressed gases ignite before combustion is timed to take place by means of the spark. This is called pre-ignition.

The effect of this irregular explosion is a great force acting against the piston as it moves towards the cylinder head. This force against the piston is only overcome by the momentum transmitted by the heavy revolving fly-wheel.

The bearings are thus subjected to a great strain which, eventually, will damage the engine.

A. W. Sullivan.

Saving the Car.

A man walked into an automobile show room and paid in cash $2,960.00. The manager suggested that he go with him to the city limits to see that he got started right. Well after some discussion the owner condescended to accept the offer and said that he had to call at several places. The first place was the blacksmith's where half a dozen shares were thrown into the back of the car without even a sack over them. The second place visited was the yard of an oil company where two drums of gasoline were upended on the door and dumped in the back seat. Remember the car had just been received in exchange for $2,960.00. Can you imagine a man wasting hard earned money like this? Do you think that car would get much care? Do you think the oil in the crank-case would ever be changed? We have our doubts. The low grade gasoline nowadays is very close to kerosene and a considerable quantity gets past the piston rings to the crank case. Some of the better makes of cars demand that this oil be changed every 350 miles. Oil is cheaper than machinery. More damage can be done to a motor in the first 10,000 revolutions than may be done in the next 10,000 miles. When you unload a new car or start one, remove its spark plugs and put in a little cylinder oil and turn the engine over. This will lubricate the walls until the oil system gets to working right. There is no reason for the useless wastage of machinery of any kind.