

BRITISH COLUMBIA

FRUIT *and* FARM

MAGAZINE

Vol. X., No. 6

JUNE, 1917



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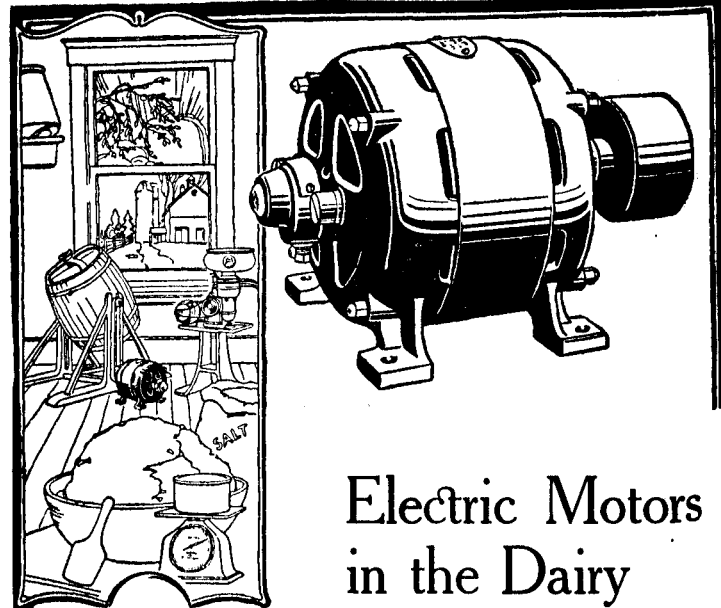
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Fruit and Farm Magazine

A Monthly Journal Devoted to the Interests of the Man on the Land.

Vol. X.—No. 6

Vancouver, British Columbia

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in Advance

Soil Fertility

With Special Reference to Manure and Fertilizers---Rotation of Crops

(By Prof. P. A. Boving, University of B. C.)

The dwellers of the cities and those living in large industrial centres are sometimes inclined to forget that all the great industries and activities in the world are directly or indirectly dependent upon the soil for their continued existence. Without agriculture—including horticulture, its crowning glory—Canada would be nothing. Even though man does not live by bread alone, yet we must eat to live. The production of foods of various kinds is consequently the fundamental industry; and it will remain so for all time to come.

From a plant producing standpoint the soil has two distinct functions:

1. It must furnish a home for the plant, i.e., a place where the roots can penetrate the earth so as to give a firm stand to the plants—be these grain, forage crops, vegetables, flowers, shrubs or trees.

2. It must furnish plantfood or nourishment for the growth, development and maturing of the plants.

Drainage, the application of lime, the adding of humus, and when practicable the mixing of different kinds of soil, all tend to improve the physical condition of the land, i.e., to better the home of the plant. The addition of fertilizing materials to the soil, or the liberation of corresponding elements from the soil, means an increase of available plant food. None of these objects can be attained where knowledge, thought or deliberate planning are lacking. System is just as essential in economic crop production as it is in any other enterprise, and the cropping system, or the rotation, as it is generally called, determines in a large measure whether we are to be successful or not in the handling of our soils and in the production of our crops.

Soil Fertility and Rotation.

What system should we follow? One that will bring returns, and that will tend not only to maintain the fertility and productive capacity of the land, but that will improve it if possible. Where crops are removed year after year without substitution the soil becomes poorer and poorer, available plant food (N., P., K.,) decreases, and the yields in some cases dwindle to next to nothing.

One often hears prairie farming referred to as a system of mining or robbing the land. While it must be admitted that there is some truth in this assertion, yet we must remember that the special conditions of the prairies favor such a system if not carried too far. Very few people talk about the soil robbing that is practised both east and west of the Prairie Provinces, even here in British Columbia, where there is no occasion or at least no justification for such methods.

We might consider the choice of rotation under the subsequent headings: 1. In-

terest, capacity and energy of the grower; 2. Capital. 3. Soil and climate. 4. Manure available. 5. Distribution of labor. 6. Market conditions.

The following rotations should be looked upon from the point of view of general principles, not as examples to be taken literally and strictly copied. A system alone is a dead thing. It is the person behind the system who makes a success of his farm or garden by his skillful adherence to or judicious departure from a system which appeals to him. The main idea is to find a rotation, i.e., a succession of crops of alternate character that will suit the aims and fit in with the conditions of soil and climate and appeal to the liking of the individual.

Garden Rotation A.

First year—Potatoes (with fertilizers); after early potatoes, green manure of some kind.

Second year—Corn and tomatoes (with stable manure).

Third year—Peas and beans (with fertilizers).

Fourth year—Cabbage, cauliflower, etc. (with stable manure).

Garden Rotation B.

First year—Clover or some other green manure.

Second year—Cabbage, cauliflower, celery, roots.

Third year—Peas and beans.

Fourth year—Potatoes, beets, carrots.

Fifth year—Corn and tomatoes (seeded down with clover late in summer).

Soil Organisms.

It is not within the scope of this article to dwell upon the mechanical handling of soils. In this connection, however, it is worth remembering that our own work performed with implements and tools of various kinds is a mere nothing in comparison with the work performed by the forces of nature. The action of the various weathering agents, of the water and of the millions of organisms which abound in all well cultivated soils is a thousand times more effective than all our toil. The best we can do is to facilitate the operations of these agencies; in fact our whole endeavor should be to create suitable conditions for these excellent workers in order either to start them working or to keep them at work.

The removal of superfluous water with subsequent entrance of air, the application of lime, humus and plant food, the ploughing and spading, the harrowing and raking of the land, the checking of weeds and the conservation of moisture by thorough cultivation in summer time, all tend to increase the activities of various soil organisms. Most of these are microscopic in size, and some of them—certain bacteria—play an absolutely controlling part in soil

fertility because they bring about the decay of the plant residues, and consequent liberation of plant food. In trying to find out how plant food is made in the soil, investigators have confined themselves almost exclusively to the nitrogen, and with good reasons. Chief among these is the prosaic market price, inasmuch as one pound of nitrogen costs us, under average conditions, about three times as much as one pound of phosphoric acid or potash. Moreover, the nitrogen is more easily lost through leaching or by conversion into gas form than the other elements. The soil factory and its workers, the soil organisms, turn out an excellent product. This product, however, is not one individual's work any more than is the finished article in a modern factory. The raw material undergoes several changes and passes through different hands before it is fit to be served in its place on the plant menu. Take, for instance, nitrogen, which undergoes at least three different changes under the manipulation of different sets of bacterial workers. Thus we have one set of bacteria which converts the organic, complex nitrogen into ammonia. This accomplished, another set of bacteria turn the ammonia into nitrates. From this state a new kind of bacterial craftsmen change the nitrites into nitrates, in which form the nitrogen can be assimilated by the plants.

Besides the bacteria referred to above, we have others that will actually liberate nitrogen in gas form and may thus be counted as absolutely destructive. Their action, however, is counter-balanced to a large extent by the activity of the nitrogen-gathering bacteria which live upon the roots of leguminous plants, such as peas, beans, clovers, etc., and are able to collect the free nitrogen of the air. The legumes provide shelter and starch food to the bacteria, and these reciprocate by giving off the valuable nitrogen to their hosts. Then we have also certain bacteria (Azotobacter) living in the soil that are able to fix the free nitrogen of the air directly, and thus to enrich the soil.

Diagram of nitrogen-fixation and liberation in the soil:

Complex nitrogen compounds—By plants: Ammonia, nitrites, nitrates. By nodule bacteria, Azotobacter, etc.: Gaseous, nitrogen.

The bacteria resemble the rest of us, inasmuch as they must eat to live, and it is just possible that the greater part of the effect of manure and fertilizers is in turn dependent upon, or at least closely inter-related with, their capacity for sustaining bacterial life.

Manuring.

We employ manure in order to improve the soil, and particularly to spread a good

table for the plants. In this connection it is not without interest to note that the old Anglo-Saxon word for the application of stable manure was "gooding," and that the corresponding Scandinavian word is "godning."

fertilizers is probably this, that they will bring good profit by careful management, but that the grower may easily be confronted with considerable loss if he employs fertilizers without knowledge of their nature or of the requirements of his particular



Prof. P. A. Boving, University of B. C.

Composition of Various Barnyard Manures.
(Average figures.)

	P.C. N.	P.C. P.	P.C. K.
Poultry	1.5	1.6	0.95
Horse, solid	0.44	0.35	0.35
Horse, liquid	1.55	0.00	1.50
Cow, solid	0.29	5.31	0.20
Cow, liquid	1.32	0.02	1.48
Pig (uncertain)			
Pig, solid	0.60	0.41	0.26
Pig, liquid	0.43	0.07	0.83
Sheep, solid	0.55	0.31	0.15
Sheep, liquid	1.95	0.01	2.26

Barnyard manure is indirectly the product of the food of domestic animals, and the composition is consequently not stable, but dependent upon the quality and quantity of the feed. Cow and pig manures are known as "cold manures" and should preferably be used on warmer soils, whereas horse and sheep manures are counted as "warm manures," and on that account show a better action on colder clay soils.

Corn and vegetables in general respond better to stable manure than do peas, beans and other legumes, at least on soil in naturally good condition—potatoes and carrots to some extent show better quality after fertilizers than after heavy dressings of stable manure. This, however, does not mean that stable manure should not be employed for these crops on poor land. It refers to naturally good rich soils.

Commercial Fertilizers.

One hears so many contradictory reports in regard to the use of fertilizers that it may seem comparatively difficult for the layman to decide which is right and which is wrong. The truth in regard to artificial

soil. In other words, we must know, and the only way to learn about the needs of the soil is by conducting experiments. The most prominent expert on plant food and nourishment may be able to give intelligent advice, but he is absolutely unable to tell exactly how a certain soil should be manured, or fertilized, unless a proper and carefully planned experiment has been conducted.

**Plan of Experiment.
Demonstrated**

Can we manage with fertilizers alone? Yes, under certain conditions: 1. Provided bacteria are present, i.e., if there is life in the soil; 2, under condition that some humus-supplying crop—preferably legumes—is grown at intervals; 3, if the manager possesses complete knowledge in regard to the needs of his particular soil, and about the nature of the fertilizers he employs.

Conclusion.

We shall find the study of the soil quite uninspiring and prosaic if we become entirely absorbed in its utilitarian aspects and forget to stop and reflect on the infinite wonders in regard to structure as well as to its immense population of invisible but by no means inactive helpers. The soil is not a dead thing. It is a thing in transition, and constant changes are going on in its dark chambers. Dame Nature appears wasteful to the superficial observer, but on closer study we shall find that she uses the same substance over and over again. We know as yet very little, and it behooves us well to look upon the wonders in Nature with respect and admiration.

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FACTS ABOUT BERKSHIRES

"The cow, the pig and the hen," as the old saw runs, are at the basis of permanent farm prosperity. And, for more than 125 years Berkshires have been an important factor in that prosperity.

As early as 1789 Berkshires were reported to be the dominant breed in England, and they have retained their supremacy to this day. But the modern Berkshire is quite different from his early prototype.

The primitive Berkshire is described as "reddish brown, spotted with black or white, coarse in head and bone, broad back, deep chest, flat sides with extraordinary length of body, thick, heavy shield over shoulders, showing coarseness of quality, long curly hair and short, strong legs." (F. S. Springer, in "Berkshire Hogs.")

The ideal Berkshire of today is black with "six white points"—four feet, snout and tip. The face is short and the nose usually somewhat "pug." The jaw is full and the neck short. The back is broad and the ribs well sprung. The loins are thick and the hams long and meaty. The legs are short, but straight and strong. The hair is fine and compact and the skin is pliable.

The modern Berkshire is a medium-sized, early-maturing hog. A six months' pig should weigh not less than 175 pounds, a year-old hog 300 pounds and a brood sow about 400 pounds.

Every farmer desires to secure large litters. But, it is even more important that every pig have a chance to develop into a well-finished market animal. There's neither pleasure nor profit in feeding runts. Berkshire sows make ideal mothers. They farrow an average of seven to eight pigs per litter and, what's more, they raise them too. Being active and careful, the sows very seldom crush or injure their offspring. They yield a liberal amount of nourishing milk that starts the little fellows well on the road toward hoghood.

The growing shoats are active grazers making good gains on inexpensive feeds. In fact, one of the strongest features of the Berkshires is their ability to turn alfalfa and other forage crops into good solid flesh.

The shoats can be fattened at almost any age desired. In fact at the Ontario Experiment Station Berkshires were unrivalled for easy fattening.

The packers all agree in considering the Berkshire as the bacon hog par excellence.

Another strong characteristic of the Berkshires is their ability to carry great weight without breaking down.

Not every farmer cares to establish a herd of registered hogs, but any mixed herd can be greatly improved by grading up with a pure bred Berkshire boar. He will imprint quality on all his get, producing better pork at less cost.

Apple Feeding to Hogs

A Good Ration that Produces Finely-Flavored Pork

(By John Stewart, Nanaimo.)

In the May issue of the Fruit and Farm Magazine there is a paragraph about the feeding value of apples for stock. The writer will give his experience of feeding apples to pigs.

About six years ago I commenced to feed cull apples to pigs. At first the apples were fed whole, but the pigs did not do well on whole apples. The experiment was then tried of grinding the apples into pulp through a cider mill by hand, and the pulped apples were mixed with shorts.

The pigs made rapid progress on that ration. For several winters the practice of grinding the apples was done by hand, but it is rather hard work grinding apples three times a day—it made one think of an easier way to get the work done. The writer owned a good gasoline engine, which has been attached to a spray pump for several years, so it was thought that the gasoline engine might take the heavier work of pulping the apples. The engine was detached from the pump and a 5-inch pulley put on the fly wheel. The engine was screwed down to a piece of plank and the plank nailed to the floor and a 2-inch belt harnessed the engine to the cider mill, which was set close to make fine pulp.

In feeding pigs we have to remember the description of the pig in the Bible: "It cleaveth the hoof but cheweth not the cud." In feeding pigs it has to be remembered that the pig does not chew the cud. This winter two pigs were purchased, and they were weighed—one a runt weighed 66 pounds and the other a mongrel, part Berkshire, part Tamworth and part Yorkshire, weighed 81 pounds. These pigs were fed a 36-pound box of apples and five pounds of shorts a day divided into three feeds. They were kept two months and killed and weighed. The runt made a gain of two-thirds of a pound and the other 1 pound a day.

Apple-fed pork has a peculiar nice flavor all its own, and has never to go begging for customers. When a buyer gets apple-fed pork once, he wants it again.

A 42-pound box of cull apples, finely pulped, fed with 6 pounds shorts into a pair of pure-bred pigs of 75 pounds live weight will make two pounds of pork a day—that is, a pound each pig per day.

Apples in any form, fed to chickens, is the worst feed that chickens can get. They stop laying eggs when they begin to feed on apples.



Synopsis of Coal Mining Regulations

COAL mining rights of the Dominion, in Manitoba, Saskatchewan and Alberta, the Yukon Territory, the North-West Territories and in a portion of the Province of British Columbia, may be leased for a term of 21 years, renewable for a further term of 21 years at an annual rental of \$1 an acre. Not more than 2,560 acres will be leased to one applicant.

Application for a lease may be made by the applicant in person to the Agent or Sub-Agent of the district in which the rights applied for are situated.

In surveyed territory the land must be described by sections, or legal subdivisions of sections, and in unsurveyed territory the tract applied for shall be staked out by the applicant himself.

Each application must be accompanied by a fee of \$5 which will be refunded if the rights applied for are not available, but not otherwise. A royalty shall be paid on the merchantable output of the mine at the rate of five cents per ton.

The person operating the mine shall furnish the Agent with sworn returns accounting for the full quantity of merchantable coal mined and pay the royalty thereon. If the coal mining rights are not being operated, such returns shall be furnished at least once a year.

The lease shall include the coal mining rights only, rescinded by Chap. 27 of 4-5 George V. assented to 12th June, 1914.

For full information application should be made to the Secretary of the Department of the Interior, Ottawa, or to any Agent or Sub-Agent of Dominion Lands.

W. W. CORY,

Deputy Minister of the Interior.

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NATIVE-GROWN BULBS

Prof. Clement Thinks the Province Can Export

The annual meeting of the Point Grey Horticultural Society was held in the Municipal Hall, Point Grey, on Wednesday evening, May 9th.

During the year 1916 the society held a series of fortnightly discussions, at which different members dealt with the culture of selected garden flowers, and these were illustrated by specimens. The following subjects were included: "Roses," by Charles Bailey, F. R. H. S.; "Pansies and Violas," by J. Livingstone; "Native Flowers for the Garden," by J. Davidson, F. L. S.; "Carnations," by W. Sandall; "Sweet Peas," by Jas. Brand; "Dahlias," by J. Renton; "Chrysanthemums," by J. Livingstone, and many others.

In his report Mr. Bogardus spoke in high terms of the valuable assistance rendered by members of the faculty of the university, the lectures given by them were said to be the best series ever given on Horticulture on the mainland of British Columbia, comprising "How Plants Feed," by John Davidson, F. L. S. "Management of the Vegetable Garden, with Special Reference to Soils and Fertilizers," by P. A. Boving; "Fruit Trees, Their Care and Management," by F. M. Clement; "Some Common Fungus Diseases—Their Nature and Control," by J. W. Eastham, provincial plant pathologist.

In addition to the valuable educational work carried on under the auspices of the society, several shows and exhibitions were held. These did much to foster competition in the community, with the result that the standard of production has been raised to a much higher plane. The Rose Show, held last year, was an unqualified success, and was the means of bringing out the suggestion to have a large Rose Show, in which all the municipalities around Vancouver should join, to show the best that can be produced. This suggestion is being put into effect on July 4th, when the Greater Vancouver Rose Show will be held in the Hotel Vancouver. The fall Exhibition of Flowers, Fruit and Vegetables was so large, that it was necessary to provide a large tent on the Municipal lawn to accommodate the floral display. On both occasions Point Grey was "en fete" thousands of visitors came from the city and suburbs to witness the exhibits.


The society also undertook an exhibit at the Vancouver Fair, and this resulted in obtaining two prizes to the value of \$50.

The secretary intimated that Reeve Fletcher of Point Grey has given a cup for competition at the next Rose Show, which has been fixed for 14th July. This intimation was received with applause.

Included in the business of the evening was an address on "Bulbs," by Prof. F. M. Clement of B. C. University, the subject being appropriately illustrated by an exhibition of tulips, daffodils, narcissus, hyacinths and other flowers brought up by members of the society.

Professor Clement is of the belief that as soon as labor can be obtained cheaply, British Columbia will be able to produce all her own bulbs and even export supplies, as there are many situations here where the soil is ideal for bulb culture. The ideal soil, he said, consists of sharp sand to which a liberal supply of vegetable humus has been added. Bulbs should be lifted during summer to thoroughly ripen and then replanted. If left in the ground, Tulips should not be mulched with manure,

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but Hyacinths should. The Chinese Sacred Lily, Grape Hyacinths and Crocuses were also referred to and methods of propagation were illustrated by bulbs in various stages of development. At the close of his address, Professor Clement was accorded a hearty vote of thanks.

The members and visitors then proceeded to inspect the magnificent collection of flowers, most of which bore their trade names. One interesting change was noted in the regular red tulip known as "Kaiser Kroon," which had been renamed "General French."

The State of Agriculture in British Columbia---1917

By W. E. Scott, Deputy Minister of Agriculture.

Production

The value of the agricultural production for the province of British Columbia for the calendar year ending December 31, 1916, was \$32,182,015, showing an increase over 1915 of \$1,055,114. This increase, however, is more apparent than real, the prices which prevailed during the past year being on an average 6 per cent higher than those of 1915. Actual production, therefore, would show a slight decrease, but taking into consideration the unfavorable climatic conditions which prevailed, the thousands of our farmers who have left the province to serve their country at the front, the high price of labor, and other deterrent factors, the returns from our farms and orchards are very satisfactory.

Increases are shown in poultry and eggs, amounting to \$859,587 over 1915. This increase was caused by the advance in price of all poultry products in 1916, which encouraged poultrymen to increase their laying stock. The revival in the poultry industry, which showed a very marked falling off in the year 1915, is satisfactory to note.

Dairy products showed an increase in value of \$215,556 in spite of the unfavorable climatic conditions which resulted in scant pasturage in many of the dairy districts of the province, and which therefore materially curtailed the milk flow.

Fruit showed an increase over 1915 of \$534,362. The crop throughout the province was generally a good one, and the prices realized on the whole were fair.

A decrease of \$333,110 is shown in grains, the reason for this decrease being the low yield in Central British Columbia, the Peace River country, and certain sections of Southern British Columbia, as a result of unfavorable weather conditions.

The following comparative table shows agricultural production and importations for the past three years:

B. C. Agricultural Production and Imports, Years 1914-15-16; Values Only.

Year 1914—Home production, \$30,184,100; imports from other provinces of Canada, \$19,908,455; imports from foreign points, \$5,290,670; total imports, \$25,199,125.

Year 1915—Home production, \$31,127,801; imports from other provinces in Canada, \$13,493,807; imports from foreign points, \$2,941,163; total imports, \$16,434,970.

Year 1916—Home production, \$32,182,015; imports from other provinces in Canada, \$14,399,965; imports from foreign points, \$2,799,697; total imports, \$17,199,662.

Land Settlement

There has been very little land settlement in the province during the past year, war conditions, of course, being responsible for the fact that immigration to this province shows a decided falling off. When this titanic struggle has been brought to a successful conclusion, we may look forward to receiving a large influx of people who will want to make their home in the many beautiful districts of this province where climatic conditions are so favorable and conditions of life attractive.

Land Clearing

Very little land clearing has been undertaken during the past year throughout the province, and more especially on our heavier timber lands on Vancouver Island and the Lower Mainland. The scarcity and high price of labor, and the excessive cost of

stumping powder, caused by the war, having proved debarring factors.

Undoubtedly, the solution of our land clearing problem is cheap labor and cheap powder, and without these conditions being available we cannot hope to see any extensive clearing of our vacant lands undertaken.

Farm Labor.

The universal complaint of farmers is that it is impossible to secure suitable help on the farm. This is one of the penalties of the war and we cannot expect to see an improvement in this regard till the war has been brought to an end. Our farmers are doing the best that they possibly can to produce from the land, but there is a limit to what the individual can do, and it is an impossibility for them to increase their production to any material extent unless labor is available.

In order to help towards the successful harvesting of our crops this year, an effort is being made to get our women, boys and girls to help in the harvesting, more especially of our fruit crop. The Vancouver Consumers' League and other women's organizations in Vancouver have expressed their willingness to do all that they can to assist, and have established a labor bureau, by means of which women, boys and girls will be sent to our principal fruit producing sections to assist in the harvesting of this year's crop.

The Educational Department have also arranged to have the summer holidays in the schools take place at a time when the main crop is ready for harvesting. Outside labor not being available, the only thing that can be done is to organize our own home supply, and there is every reason to hope that a patriotic response will be made

to the appeal from our fruit growers and farmers for assistance, so that their crops may be safely garnered this year.

Increased Production.

Imperial, Federal and Provincial governments, public bodies and individuals have been urging on farmers the necessity for their straining every effort in order that production may be increased, and that our troops, those of our Allies and the civil populations of the warring countries in Europe may be fed. A splendid response has been made to this appeal by our farmers, and given a favorable year we may hope to see our production being well maintained.

Cultivation of City Lots.

Through the praiseworthy efforts of the mayor of Victoria, a large number of city lots will produce this year. The city undertook the ploughing of lots at a very nominal cost, and also supplied suitable seeds for cultivators. The same example has been followed by practically all the cities in British Columbia, and the produce raised by this means will help to swell our production and should tend towards reducing the cost of living. There are many lots of excellent soil in and around the city of Victoria, which will produce heavy crops of potatoes and other vegetables, and the cost of living will be largely reduced in the case of families who undertake the cultivation of these lots and raise the right kinds of vegetables thereon.

High Cost of Living.

The cost of living has been constantly advancing, but the farmer has not been receiving his share of these increased prices. Too big a difference exists between the price the farmer receives for his produce and the price that the consumer pays. The only solution to this state of affairs is co-operation amongst farmers, and co-operation also amongst consumers, so that by proper organized effort on both sides prices may be regulated on an equitable basis.

BRITISH COLUMBIA AGRICULTURAL PRODUCTION AND IMPORTS. YEARS 1914-15-16—VALUES ONLY.

Description	Year	Home Production	Imports from other Provs. in Canada	Imports from Foreign Points	Total Imprts.
Live Stock	1914	\$8,123,359	\$5,183,826	\$ 269,432	\$5,453,258
	1915	8,797,875	2,949,829	105,078	3,054,907
	1916	8,703,186	2,350,920	138,119	2,489,039
Meats	1914	1,211,600	2,908,669	887,305	3,795,974
	1915	1,864,673	2,322,922	502,754	2,825,676
	1916	1,405,872	2,782,758	753,182	3,535,940
Poultry products..	1914	2,410,022	1,025,827	729,718	1,755,545
	1915	1,464,720	832,007	137,590	969,597
	1916	2,324,307	1,012,132	167,859	1,179,991
Dairy Products ..	1915	3,012,000	2,751,321	1,737,730	4,489,051
	1915	3,034,340	2,271,457	1,081,663	3,353,120
	1916	3,251,856	3,130,080	475,418	3,605,498
Fruits, etc	1914	996,071	647,670	580,421	1,507,452
	1915	1,642,300	168,970	339,090	555,047
	1916	2,176,662	276,435	425,581	805,078
Vegetables	1914	3,238,542	.....	418,812	339,451
	1915	3,063,092	.....	215,702	168,715
	1916	3,374,517	.....	346,927	243,865
Fodders	1914	6,578,039	297,232	136,293	473,525
	1915	5,899,283	175,367	44,611	219,978
	1916	5,741,979	230,958	36,956	267,914
Grains, etc	1914	2,770,985	7,091,742	476,175	7,567,917
	1915	5,626,330	4,757,890	494,235	5,252,125
	1916	3,294,013	4,615,381	428,083	5,043,464
Miscellaneous— (Hops, Honey & Nursery Stock)	1914	389,278	2,168	54,784	56,952
	1915	232,208	15,365	20,440	35,805
	1916	356,492	1,301	27,572	28,873
Indians	1914	1,459,204	.....	.....	.....
	1915	1,502,980	.....	.....	.....
	1916	1,554,081	.....	.....	.....
Total	1914	30,184,100	19,908,455	5,290,670	25,199,125
	1915	31,127,801	13,493,807	2,941,163	16,434,970
	1916	32,182,915	14,399,965	2,799,697	17,199,662



THE GILLINGHAM PEACH

A promising peach is the "Gillingham," particularly as it is practically free from leaf curl. The fruit is large, yellow-meat, of the Crawford family or type, and fully equal if not superior to this favorite variety in flavor. It is a prolific fruiter and comes into bearing young, the original tree bearing its first fruit three years from seed. The accompanying cut shows a one-year-old at the end of the summer following planting.

A BOON TO TELEPHONE USERS

We all know the people who abuse the telephone—who talk over it as if there was no one else in the world but themselves, and those they are speaking to—there are persons at each end patiently waiting—it may be an urgent matter, perhaps one of life and death. One can be almost excused a loss of temper under such circumstances. With happy thought the B. C. Nurseries Company, whose advertisement appears elsewhere, have designed and printed a small, neat card at their own expense, which they are sending to those who ask for it, to be placed near the phone, which brings vividly to those who use your instrument, the necessity of "thinking of others." All that is necessary is to mention "Fruit & Farm"—a copy of the card will come free by return mail.

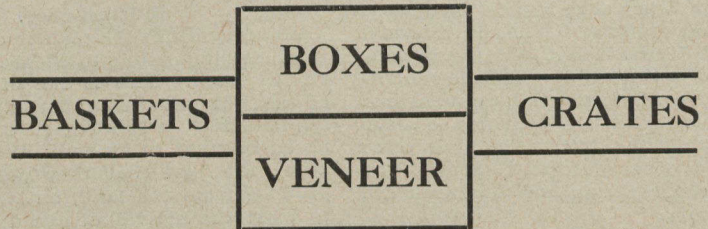
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Evolution of Agriculture

(By L. S. Klinck, Dean of Agriculture, University of British Columbia.)

Article III.

Seventeenth Century.

"Great economic changes have," Rogers tells us, "resulted from small alterations in the details of manufacturing processes. Similar changes may often be explained by some little-noticed alterations in farming practice. The introduction of the field cultivation of turnips and of potatoes, for example, was as truly the parent of social revolution as the introduction of textile machinery. Advance in agricultural skill, the adoption of new methods, the application of new resources, the invention of new implements have been, under the pressure of national necessities, powerful instruments in breaking up older forms of rural society, and in molding them into their present shape."

The beginning of the seventeenth century promised to usher in a new era of agricultural prosperity. Enclosures were extended. Estates were consolidated. Agrarian partnerships, in which it was no man's interest to be energetic, made way for individual occupation, which offered the strongest incentive to enterprise. Thus, opportunities were afforded for the introduction of new crops, the utilization of land to the best advantage and the adoption of improved methods. Dairying was extended in the south and west. Turnips and potatoes were recommended for field cultivation, and the value of clover and economic grasses was beginning to be recognized. While these crops did not come into general culture rapidly, they proved of inestimable value to those farmers who cultivated them.

The slow progress of these blessings is, perhaps, the strongest testimony to the innate conservatism of the farmers of the time. Green crops were long considered to be suited only to the garden, and as our forefathers were prejudiced against the spade it was difficult to get such crops grown, even there. For years the potato was regarded as a curious exotic, not an introduction of great economic importance. For centuries it was regarded as unfit for human food. It was usually referred to as "the lazy root" or as "food for beggars." Even in Coke's time the best that many of his progressive tenants would say for the crop was "that perhaps it might not poison pigs."

This period was one of intense land hunger. Farms continued to change hands rapidly. The old self-sufficing agricultural economy was becoming thoroughly disintegrated.

"The history of agriculture in the eighteenth century is," according to Curtler, "remarkable for several features of great importance. It first saw the application of capital in large amounts to farming, the improvements of the time being largely initiated by rich landowners. The agricultural revolution thus effected was largely a result of the industrial revolution that then took place in England. Owing to mechanical inventions and the consequent growth of the factory system, large manufacturing towns arose, whence came a great demand for food. To supply this demand farms, instead of being small, self-sufficing holdings, were greatly enlarged, and became manufactories of corn and meat. The century was also remarkable for another change. England, hitherto an exporting country, became an importing one. The

progress of the century was furthered by a band of men whose names are, or ought to be, household words with English farmers—Jethro Tull, Lord Townshend, Arthur Young, Bakewell, Coke of Holkham, Sir John Sinclair and the Collins."

Jethro Tull was the great English cultivator of the early half of the century. The gist of his proposed reform is expressed in his book "The Horse-Hoeing Husbandry." Tull believed in thorough tillage, at frequent intervals, of all field crops from wheat to turnips. To make this feasible drilling was, of course, essential; and to make it economical horse labor was requisite. The drill and the horse-hoe, which he invented, were only subsidiary to the main end of thorough tillage.

Largely as a result of Tull's unflagging zeal, agriculture for the moment, became the fashion in society, a part, perhaps, of the artificial movement which in gardening created the landscape school. Tull's system was discussed at Court. Pope loved to play the philosopher "among the cabbages and turnips." Walpole opened the letters of his farm steward before he broke the seals of correspondence on state matters. Bolingbroke, on his Dawley farm, propped up between two haycocks, read Swift's letters, uplifting his eyes to heaven, not in admiration of the author, but in fear of rain. "Dawley," said his political opponents, "has long been famous for a Great Cry and Little Wool."

Townshend, upon his retirement from public life, after his disagreement with Walpole, devoted himself to the management of his Norfolk estates and set an example to English landlords in wisely and diligently experimenting in farm practice. His two special hobbies were the field cultivation of turnips and improvement in the rotation of crops. Pope says his conversation was largely of turnips, and he was so zealous in advocating them that he was nicknamed "Turnip Townshend." He initiated the Norfolk or four-year rotation, in which roots, grasses, clovers, and cereals were grown in proper sequence.

Townshend's efforts to improve his estates were richly rewarded, but his example only spread to other counties by slow degrees. Outside of Norfolk, "both landlords and farmers still classed turnips with rats as Hanoverian innovations, and refused their assistance with Jacobite indignation."

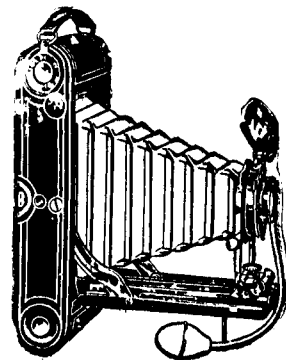
The introduction and field cultivation of roots and forage crops had enabled the farmers to carry larger animals, and more of them. More stock gave more manure; more manure raised larger crops; larger crops supported more numerous flocks and herds. Thus, to the hopeful enthusiasts at the close of the eighteenth century, "the agricultural circle seemed capable of almost indefinite and always profitable expansion."

The capitalist class was increasing; the successful merchants and lawyers were acquiring land and becoming squires, and Moryson tells us that "the buyers, excepting lawyers, were, for the most part, citizens and vulgar men."

Writing of the sturdy yeomanry of the time Fuller says: "The yeomanry is an estate of people almost peculiar to England. He wears russet clothes but makes golden

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payment, having tin in his buttons and silver in his pockets. He seldom goes abroad and his credit stretches farther than his travel."

But recent improvements in farming could not yield their full profits till the live stock of the country was improved. To this task Bakewell set his hand. While spectacularly successful in improving the long horn cattle and cart horses, his greatest triumph was the production of the New Leicester sheep, a breed which, in half a century, spread over every part of the United Kingdom, as well as Europe and America, and gave England two pounds of meat where she had but one before. As an evidence of the popularity of his new breed one of his rams, "Two Pounder" by name, brought him a revenue of 1200 guineas in a single year. Bakewell was the first agriculturist who saw the impending change and who knew how to meet it. He possessed, in a remarkable degree, that artistic perception and intuition inherent only in the greatest of breeders. By providing meat for the millions he contributed as much to the wealth of the country as Tull or Townshend, or as Arkwright or Watt.

Arthur Young, who later became the first secretary of the British Board of Agriculture, has rightly been regarded as one of the greatest English agriculturists and one of the poorest of practical farmers. The enthusiasm for farming progress, which he zealously promoted, spread rapidly. Great landlords took the lead in agricultural improvements. Their farming zeal, however, did not escape criticism, and Dr. Edwards, in 1783, expressed a feeling which was prevalent two centuries before, that "gentlemen have no right to be farmers, and their entry upon agriculture, to follow it as a business, is, perhaps, a breach of their moral duty." George III rejoiced in the sobriquet "Farmer George," and considered himself more indebted to Young than to any other man in his dominions. He always carried the latest volume of Young's "Annals" with him in his travelling carriage; kept his model farm at Windsor, and experimented in stock breeding.

The enthusiasm for farming began to be scientific as well as practical. No new book escaped the vigilance of agriculturists. Nor were the clergy less zealous. An archdeacon, finding the churchyard cultivated for turnips, rebuked the rector with the remark "This must not occur again." The reply, "Oh, no, Mr. Archdeacon, it will be barley next year," shows that whatever were the shortcomings of the church, the clergy of the eighteenth century were at least devoted to the rotation of crops.

Coke of Holkham, who has not inaptly been described as "the father of experimental farms"; Sir John Sinclair, whose greatest monument is his "Statistical Account of Scotland," and the man to coin the words "statistics" and "statistical," and Lord Kames, 'who illustrated with rare good sense, and the daintiness of a man of letters, all the economies of a thrifty husbandry," were among the foremost men who contributed to the agricultural progress of the country.

Up till nearly the close of this period "bucolic life had been the pastime of a fashionable world, the relaxation of statesmen and the artificial inspiration of poets. But farmers had neither asked nor allowed scientific aid." The dawn of a new era, in which practical experience was to be combined with scientific knowledge, was marked by lectures of Sir Humphrey Davy in

1803. In the preceding year the Board of Agriculture arranged a series of six lectures on "The Connection of Chemistry with Vegetable Physiology," to be delivered by Davy, then a young man of 23. Davy had already made his mark as the most brilliant lecturer of his day, and the talent, rank and fashion of London, women as well as men, were attracted to his course. So great was his success that he was appointed Professor of Chemistry to the board, and in this capacity gave lectures during the ten following years.

As a result of his investigations, Davy developed many of the principles which underlie good farm practice, but his most valuable work lay in the stimulus he gave to the science of agricultural chemistry. It was his work which inspired the choice by the Royal Society, founded in 1838, of its motto: "Practice with Science."

The new alliance of science with practice bore rich and immediate fruit. It encouraged practical farming on scientific principles, and it also encouraged agricultural science to proceed on practical lines. It promoted discovery and invention, fostered competition, stimulated enterprise and created a standard of the best possible methods and results in British agriculture. Its journal disseminated the latest results of scientific research as well as the most recent lessons of practical experience, and it commanded the pens of masters of the lost art of agricultural literature—"men who wrote with the knowledge of specialists and with the forceable simplicity of practical men of affairs."

In 1840 appeared "Liebig's Chemistry in Its Application to Agriculture and Physiology," in which the author traced the relations between the nutrition of plants and the composition of the soil. This book was received with enthusiasm, and completely changed the attitude which agriculturists generally had maintained towards chemistry—namely, one of contempt, founded on ignorance. The new agriculture, born in the laboratory at Giessen grew into strength at the experimental station at Rothamsted. There, for more than half a century, Lawes and Gilbert conducted experiments of incalculable benefit to agriculture, in the objects, method, and effect of manuring; the scientific basis for the rotation of crops and the results of various foods on animal in the production of meat, milk and manure. On their work has been built the modern superstructure of British agriculture. Previous rules of cropping were revolutionized. Farmers realize that on the one hand if they ruined their land, their land ruined them, and that on the other hand "only those who have lathered could shave."

As a result of scientific investigation, a tendency towards exactitude began to characterize the farming of the day. There still doubtless remained many persons whose allegiance to the haphazard rule of tradition was unbroken, whose "stubborn hearts," as Spencer says, are not yet "mollified by 'sweet science'."

Typical farmers were not, however, as far as concerned their business, much behind the practitioners of other callings in appreciating the advantages of exact knowledge.

(To be continued.)

PROTECTION OF SHEEP IS URGED

The Wool Growers' Association has started a campaign to bring wool producing animals into public notice and to claim the protection which sheep need, as being far more

important than the conservation of fur-bearing animals for sport.

It is not merely the price of wool, but the ever-increasing shortage which makes the matter so serious in face of the demand. The universal decrease in flocks has doubled the price of mutton for food, and unless something is done soon to alter the present state of affairs, there will soon be an absolute famine.

The Wool Growers' Association places the blame for this shortage upon the depredation made by coyotes, and until steps are taken to diminish the pests, or protect the sheep by coyote-proof fencing, the sheepmen will continue to suffer such losses as to send them out of the business altogether.

The United States is suffering in the same way, and instead of exporting wool will soon have to import it for their own use. There, every effort is made to exterminate the coyotes. Professional hunters are sent after them. In California three bounties are being paid, one by the state, another by the county and a third by the stockmen, amounting to \$11 a head.

The bounty in British Columbia was \$3 until a short time ago, when it was reduced to \$2, and both trappers and novices say they cannot earn a grub stake going after coyotes at that price.

The association also points out that whatever the bounty, only a fractional part of it goes to the pocket of the man who has suffered the loss; he may get a pelt or two during the season, but what he is sure of is the loss which in many instances is 33 per cent of his crop of lambs. The association, therefore, recommends that the game warden and his deputies turn their attention to protecting the sheep.

DEPARTMENT OF AGRICULTURE ESTIMATES.

In the budget speech, delivered by Hon. Mr. Brewster, the following appropriations are made for the Department of Agriculture:

Department of Agriculture (Other than salaries.)	
Administration, temporary employment and outside service, destruction of noxious weeds, departmental exhibits, and miscellaneous expenditure	\$ 18,000
Board of Horticulture—expenses of members attending meetings	500
Compensation to owners of cattle slaughtered for tuberculosis	20,000
Fruit-packing schools	1,500
In aid of Agricultural associations	250
In aid of B. C. Beekeepers' Association	250
In aid of B. C. Dairymen's Assn.	1,500
In aid of B. C. Entomological Soc'y	250
In aid of B. C. Fruit-growers' Assn.	3,000
In aid of B. C. Goat-breeders' Assn.	250
In aid of B. C. Poultry Assn.	1,500
In aid of B. C. Stock-breeders' Assn.	1,500
In aid of Flockmasters' Assn.	500
In aid of Farmers' Institute (including educational work)	15,000
In aid of Women's Institutes (including educational work)	7,500
Inspection of nursery stock, trees, plants, etc.	9,000
Suppression of diseases affecting fruits, vegetables, plants, etc.	20,000
Towards cost of operating dry farming experimental plots	2,000
Travelling expenses of officers on duty	20,000
Total	\$142,250

How to reduce your stump blasting costs

IN various publications the figures for the amounts of powder to use differ as much as three hundred per cent. This conflicting advice makes it desirable that we outline the basis on which you can determine for yourself pretty closely what number of sticks will be needed.

One tabulation says that sixty-five pounds of dynamite will be needed to blast a six-foot fir stump. As you will see below, we recommend forty sticks of Giant Stumping Powder, which is about eighteen pounds. If the eighteen pounds is properly placed and properly detonated, it will throw out and break up the stump.

Before you start blasting, go over the ground carefully and determine just exactly what is best to do—how much of the work you are going to do with the Powder, how much with horses or engine, and how you are going to handle and burn the wreckage. Nearly always it is best to plan for throwing the stumps entirely out of the ground. Time of men and teams, or engine, is expensive, and it takes lots of time to pull roots, even when loosened. Remember that you can often throw very large stumps out of the ground without breaking them by using two or more rather light charges under different roots of each stump, fired by an electric blasting machine. Then the stump can be split up with a half stick or a stick of Powder in an auger hole. This method takes very little more time, saves half or more of the powder it would take to blast them out the ordinary way, and tears very little hole in the ground.

To help you in estimating the quantity of powder that you will need for removing your stumps, we give the following table. You will find it nearly correct by the time the job is done, although in many individual cases stumps will require more or less than the quantity stated.

Diameter of stump in inches at 2 feet from ground	Sticks of 1½ in. Giant Stumping Powder
10 inches	1 or 2
15 inches	4
20 inches	7
24 inches	10
30 inches	12
36 inches	16
40 inches	22
48 inches	26
60 inches	32
72 inches	40

When sticks 1½ inches in diameter are used, this estimate must be changed in proportion to the weight.

If you use an electric blasting machine skillfully, you can reduce the above 12 to 20 per cent.

In applying this table to actual work, use it as a guide for your estimating, and not as a hard and fast rule. Old stumps require less powder than green stumps. Light soil or sandy soil requires more than clay soil. Stumps blow out easier in wet soil than in dry soil—with less powder. A proper charge will break the stump and throw it

just out of the ground. Deeply placed charges must be heavier than those located shallow, because of the greater earth burden they must lift. In loose or deep and well drained soil the tree roots go deeper than in wet, rocky or shallow soil, and require deeper placing of charges, with consequently more powder.

Giant Stumping Powder and Giant Powders 40, 50 and 60 per cent. may be obtained everywhere in Western Canada. If you do not know where to get them, write direct to the manufacturers at Vancouver and they will see that your requirements are supplied promptly.

Save those dollars

You can cut down the cost of stump blasting by using Giant Stumping Powder.

It goes further than ordinary dynamites. It exerts its strength over a wide area, cracking, splitting and heaving out the stumps, roots and all, rather than shattering them or throwing them high in the air.

It is made especially to suit Canadian farm conditions by a Canadian Company with many years' experience—the company that originated all "Giant Powders."

It is being used by farmers everywhere in British Columbia. Scores of these write us that Giant "gives better results," "saves money," "shoots the roots," "resists cold" and is "always the same."

Get our valuable book that tells how to save dollars on your stump blasting. The coupon or a post card will bring it.



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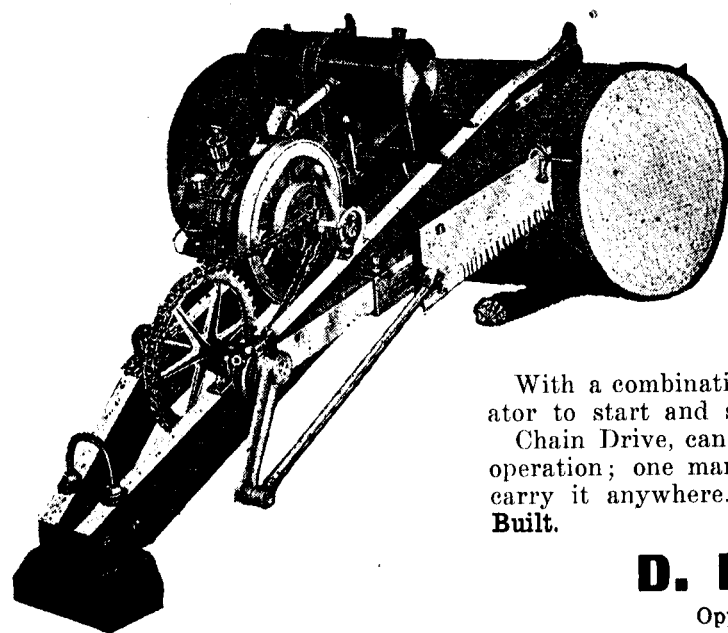
Send me your book, "Better Farming with Giant Stumping Powder." I am interested in the subjects which I have marked X:

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- DITCH BLASTING
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Orchardists of British Columbia Not Optimistic Regarding the Apple Situation

Seek An Embargo on Import—British Market Closed—Packing and Labor Dearer — Delegates Appointed and Will Hold Conferences on Prairies.

Having placed their case before the Provincial Government, receiving assurance that the province will go into the situation with an idea of rendering definite assistance, the representatives of the B. C. Fruit Growers' Association, Messrs. C. E. Barnes and R. M. Palmer, will, within a few days, leave for the East. They propose to meet representatives of farmers' institutes on the prairies, and after a series of conferences there will meet the Ontario and Maritime Provinces men in Eastern Canada, after which a united delegation will call upon the Ottawa Government for some measure of relief in saving the apple industry of the Dominion from the virtual destruction which it is claimed the British embargo against apples threatens it with.

Messrs. Barnes and Palmer discussed the question at some length with the provincial executive recently, asking for the government's moral support in their mission. At the conclusion of the interview, they placed the following memorandum in the hands of the government:

No Relaxation for Canada.

"In a speech on February 22 last, Mr. Lloyd George announced the establishment of an embargo on shipments of various commodities into Great Britain, included was a total embargo on fresh apples from all sources. The embargo was to apply to the Dominion equally with foreign countries without preference, such as was provided on Empire-grown teas, or any other modifications.

"After the original announcement, the British Government modified the embargo so as to permit shipments from Australia to the extent of 50 per cent. of the 1916 imports from that source. We understand that over 500,000 boxes of Australian apples

have been shipped in accordance with this modification. There have been other changes relaxing the original rules, but none covering the 1917 apple production of Canada.

For many years the production of apples in Canada has much exceeded the home consumption; the export trade is an important and essential element of the industry. The exports and imports and the net surplus of Canadian apples for a period of years average 250,839 barrels, imported valued at \$731,070, with 1,015,551 barrels, exported valued at \$3,048,689, showing a net surplus average per year of 764,712 barrels from 1911 to 1916.

About 90 per cent. of the Canadian exports go to Great Britain, the balance to a number of markets principally overseas.

"The United States normally exports about 2,500,000 barrels of apples. These go mainly to Great Britain. They must, therefore, put a surplus into home consumption this year. The northwestern states are likely to attempt to increase their shipments to Western Canada, which will further increase our difficulties.

Effect of Surplus.

"Just what the effect of a million barrels of surplus apples on the Canadian market will be needs no emphasis. It might be pointed out that the four western provinces consume annually about half a million barrels. Even one hundred thousand barrels extra would overload the market and the million barrels surplus which Canada has to dispose of spells disaster.

"The apple orchards of British Columbia are just coming into full bearing; for five years past the competition of low-grade, less than cost apples from the northwestern states has prevented remunerative prices. At the present time large numbers of or-

chardists, their sons, orchard help and fruit-packers, are on overseas service; over 3000 enlisted men have gone from fruit districts of less than 20,000 total population. The orchards are being operated under great difficulties especially shortage and high cost of living, combined with unduly low returns. While no industry has given of its able-bodied men more freely, no feed-producing industry to our knowledge is being so hard hit by war conditions.

Tremendous Crops.

"The planting of apple trees in British Columbia is shown as follows: 1891, 350,000 trees growing; 1901, 435,644; 1911, 1,976,425; 1913, 2,291,173.

"As is shown by the following table the apple orchards are just coming into full bearing. Production, 1910, 350 carloads, totalling 210,000 boxes; 1911, 417 cars; 1912, 716; 1913, 795; 1914, 1142; 1915, 1639; 1916, 2495; 1917, estimated 3100.

MR. FRUIT SHIPPER:

Do you know that SWARTZ BROTHERS, 155 Water Street, Vancouver, B.C., sell more fruit for the British Columbia Farmer than any other commission house in Vancouver, B. C.

WHY?

Because it is the home product that the people want. We aim to please our customers and help the B. C. Farmers.

We guarantee returns thirty-six hours after goods are sold.

Give us a trial with your next shipment of fruit and be convinced.

15 Per Cent Charged on All Goods.

Write for particulars,

SWARTZ BROS.

"Our fruit growers generally accept the decision of the Imperial Government as necessary, and I am quite sure I convey their sentiments when I say they gladly submit to any sacrifice however great it may be for the preservation of the Empire. It is, however, quite proper to urge in this connection that the fruits districts of British Columbia have supplied a remarkably large quota of men for the Empire's defence and that these men, when they return, may then quite reasonably ask whether every possible step was taken during their absence to protect their future livelihood. It can not be pointed out too forcibly that our apple orchards must be cared for continuously; that neglect for even one season may be almost as destructive as an invading army could be. Enforced neglect at the present time implies certain conclusions; the reabsorption of the 3000 or more enlisted men which the industry has supplied will be difficult, perhaps impossible; the production of apples in British Columbia needed for Western Canada will be reduced very considerably and for a considerable period of years to the detriment of the consumer and of Canada and the loss to the orchard owners both of the investment of labor and money for years past and of revenue for years to come will be very great.

"The situation created by the proposed embargo is a serious one; it calls for effective action."

Mr. Brewster's Statement.

Premier Brewster informed Messrs. Barnes and Palmer that the government some time ago took up with Ottawa a pro-

posed relaxation of the British embargo against lumber, salmon and fruit and succeeded in getting some measure of relief on lumber and salmon. Sir George Foster, however, said it would be practically impossible to assure any relaxation of the embargo on apples. Now that the United States had gone into the war Ottawa would doubtless be in a difficult position with shutting out American apples. The Provincial Government realized the seriousness of the case, however, and could quite appreciate what a restricted market, higher production and selling costs, and increased competition all meant at a time when the crop to be disposed of was larger than ordinarily. The government would go into the matter, he said, in an endeavor to do what it could in helping to take care of the situation in a permanent way.

The deputation discussed with the executive the cold storage houses for keeping apples through till May and June, thus preventing a flooding of the market in the early winter months and a consequent scarcity in the very early spring.

Now 10 per cent of the British Columbia apples were held in cold storage, said Mr. Palmer, although the American growers had gone largely into the cold storage business with great success. He explained to the government that it was not possible to do much this year towards canning and evaporating facilities.

Mr. Barnes drew attention to the fact that the relations between the British Columbia apple grower and the prairie farmers were quite friendly and, therefore, before the apple men went to Ottawa they intended to consult with the farmers so as to get their views as much as possible in asking the Federal Government for relief for the

apple industry of the Dominion. It is not the intention to ask for merely an increased duty, as this would not meet the situation, as no increase would keep out American apples, and in any case would not please the prairie farmers.

B. C. Heifer Comes Third in Ayrshire Breeders' Record of Performance

In the Record of Performance Test held by the Canadian Ayrshire Breeders' Association, the British Columbia heifer "Grandview Blossom" 37519, owned by Shannon Bros. of Cloverdale, B. C., came third in the 3-year-old class in butter production, with 378 lbs. from 9171 lbs. milk. The average test of this cow was 4.20 per cent. fat.

For Sale--3 pedigreed Holstein bulls

All from heavy milk-producing stock. Ages, 3 years, 15 months and 4 months, respectively. Address.

D. W. STRACHAN,
Tranquille, Kamloops, B. C.

*A Breeder's Card this size
will cost only \$1.25 per
month. Advertise the stock
you may wish to sell.*

Clothes Service

These stores' growth—their ever-increasing popularity—is based on a foundation of style, quality and value. Our own tailors give the finishing touches to all suits, whatever the style or price, and our interest does not stop with the sale of a suit. We will press it up any time, and as often as you like, free of charge. We aim to supply your clothing needs not once only, but all the time; and of course we can do this only by giving such service and value as will bring customers back.

Men's Suits at \$15, \$18, \$20, \$25, \$30 and up to \$40

—in all the prevailing and correct styles and models. See our immense stock.

Arrow Shirts \$1.25 to \$8.50

—Leading and reliable brands of men's furnishings of every description, in great variety. Let us dress you.

**2 Big Stores
for Men**

Wm Dick, Ltd.

33 and 47-49 Hastings St. East, Vancouver.

**2 Big Stores
for Men**

Scheme to Put District Dairy Products on Market to Help Both Consumer and Local Industry.

A new organization has just been formed by the prominent men in the dairy products industry, which is to be a non-profit, and non-competitive concern, the purposes of which will be to enlarge the dairy industry in the Fraser Valley and districts adjunct to Vancouver, in the interests of the people not only as regards better health and nourishment, but to help reduce the cost of living.

The organization will be called the Canadian Dairy Products Publicity Bureau, and its members embrace the whole of the different branches of the dairy industry, such as the dairy farmers, milk dealers, butter, cheese and ice cream producers and dealers, and machinery manufacturers dealing in dairy product equipment.

Prominent members of the organization declare that fully 75 per cent of the dairy products now consumed in the city of Vancouver are shipped here from districts that are not immediately tributary to this city and that if all these products were produced in the home territory of this city, it would add several hundreds of thousands of dollars annually to the moneys received by the dairy farmers and expended in this city.

The organization will also endeavor to show that milk, cheese, butter and ice cream actually can reduce the cost of living if more generously used, and to bring this before the people they are launching an advertising campaign in the newspapers.

It is declared, for instance, that a quart of milk is equal in actual food value to three-quarters of a pound of round steak, or seven bananas, or four cans of tomatoes, or three-fifths of a pound of pork chops.

Make One Spraying Do the Work

Combine your sprays. Lime-Sulphur, Arsenate of Lead and Bordeaux are death to Scale, Codling Moth, and Fungus, but harmless to Aphis, Pear Psylla, Leaf Hopper, Woolly Aphis, Thrips and other soft-bodied, sap-sucking insects that are destroying fruit and fruit profits. For these pests spray with

Black Leaf 40
40% Nicotine

Kills
Aphis

By using it with other sprays, you make one spraying do the work of two, or even three. Experiment Stations and Agricultural Colleges recommend combined sprays.

Now is the time to spray. Do you realize that Aphis is a positive menace to your orchard profits? Black Leaf 40 won't fail you. It's highly concentrated. Requires only small quantity. Cost is low. Use it, and grow better fruit.

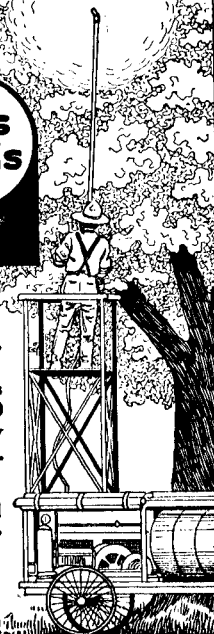
FREE SPRAY CHART AND BOOKLETS

Write today for these helpful booklets, "Bug Biographies," and "How to Control Apple Aphis." Will also send you free chart, "When to Spray." Every apple grower should have these.

The Kentucky Tobacco Product Co.

INCORPORATED

Louisville, Kentucky



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READY FOR ERECTION

Everything supplied from the largest Timber to smallest nail
Every part carefully cut and marked ready to put together

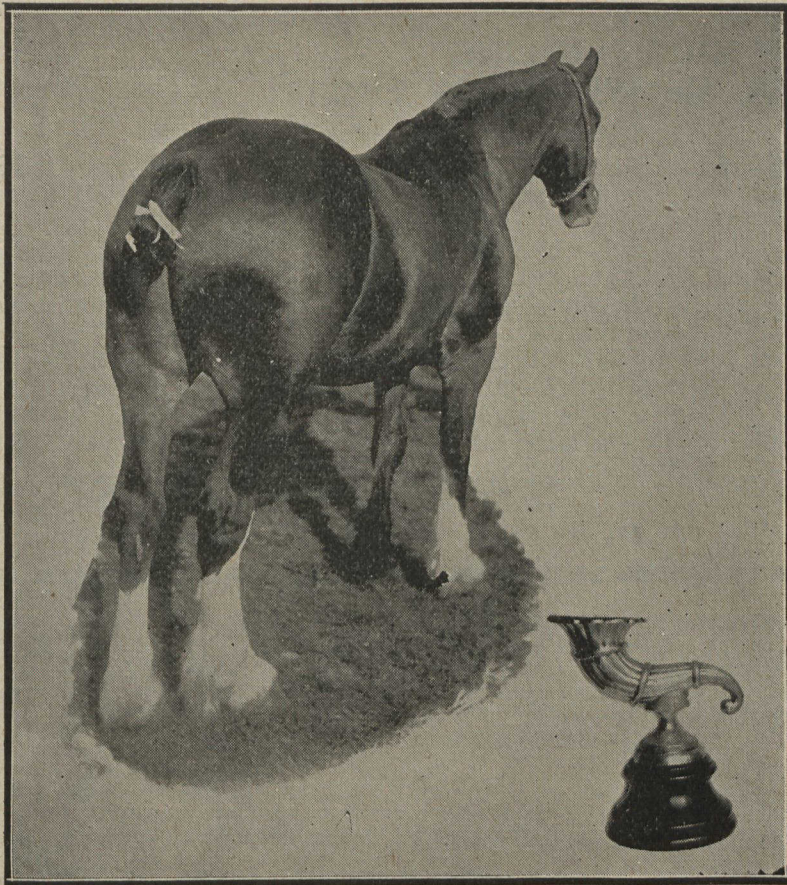
WE SAVE YOU MONEY

Why pay big wages to mechanics. Build it yourself. We supply carefully prepared detailed plans, and most explicit instructions.

Write for illustrated catalogue today.

Twentieth Century House Company

403 Pender St. W., Vancouver, B. C.



DICK, shown in above cut, is a fine specimen of the Clydesdale heavy draft horse. Bred in British Columbia. He is owned by the Imperial Oil Co of Vancouver city, and is the winner at last year's Vancouver Exhibition of the \$250 Trophy.

ILLUSTRATION STATIONS IN CANADA

The Department of Agriculture of the Dominion government is carrying on illustration work in crop production and cultural methods with farmers in the Provinces of Quebec, Alberta and Saskatchewan.

Farmers owning or operating land favorably situated for the carrying on of such work co-operate with the department.

The farmer puts under the direction of an officer of the Dominion experimental farms system, a part of his farm, having a good wide frontage on a well-travelled highway, each field having the same frontage along the same highway, so that the crops and cultivation are unavoidably in evidence to the casual traveller, and easily inspected by the interested visitor.

The department, for the first year at least, furnishes the seed necessary to sow such of the fields as it is decided to put under crop that year. In subsequent years the farmer saves enough of the best of the crop grown on these fields to do the necessary seeding. This, of course, provided the grain produced is satisfactory as to purity and germinative power.

Work Done by Farmer.

All cultural and harvesting operations in connection with these fields, i.e., the ploughing, harrowing, etc., of the fields

and the sowing, harvesting and threshing of the grain therefrom, are done by the farmer. All work indicated above is done in exactly such ways and at exactly such times as directed by the Illustration Station Division of the Dominion experimental farms system. The farmer keeps a record of the amount of time taken to perform the different operations on each field, and threshes the grain harvested separately, so that it will be known how much is harvested from each field.

The records just mentioned of the work and crops resulting, together with brief notes made each week, are duly entered on blank forms provided for that purpose. The work of making such notes and entering up the work done on each field does not entail more than one hour's work each month. Each week the farmer mails to the Central Experimenting farm, Ottawa, a form filled out with full particulars as to the work done, general weather conditions and crop progress on the different fields. The farmer permits to be placed in front of each field a sign stating briefly the method of preparing the land for the crop growing thereon, or the treatment given the plot that year.

On all these farms, whether located in the Province of Quebec, or in Saskatchewan or Alberta, systematic rotation of crops suitable to the district served, as well as the best cultural methods and most suitable varieties of crops, are being demonstrated.

Good For Man And Beast



Kendall's Spavin Cure has now been refined for human use. Its penetrating power quickly relieves swellings, sprains, bruises, and all forms of lameness. It is just what you need around the house. Write for many letters from users to prove its effectiveness.

T. J. Smith, Spencedale, Ont., says—
"Have used Kendall's for many years in my stable and house and it never has failed us yet."

Kendall's Spavin Cure

For Horses —And Refined for Man.

—has been used by horse-men, veterinarians, and farmers for over 35 years. Its worth has been proved, for spavin, splint, curb, ring-bone and the many other hurts that come to horses.

ONION LAKE, Sask., April 22nd, 1915.

"Kendall's Spavin Cure is about the best all-round liniment for both man and beast that I know."

THE HUDSON'S BAY COMPANY.

Get Kendall's Spavin Cure at any druggist's.

For horses \$1. bottle—6 for \$5, Refined for man 50c.—6 for \$2.50.

Treatise on the Horse free from druggist or write to

Dr. B. J. KENDALL CO. Enosburg Falls, Vt. U.S.A.

112



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THE LOTUS "Serves You Right"

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Room with detached bath \$1.00 day up
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A Monthly Journal Devoted to the Interests
of the Man on the Land

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Seymour 2018

Vol. X. JUNE No. 6

EDITORIAL

THE NEW LAND BILL

During the session just closed the Agricultural Credits Act was wiped out and a new measure, an act to promote increased agricultural production, enacted in its stead. The new statute takes very comprehensive powers and materially enlarges the functions of the board, which consists of five members, and was the subject of the usual criticism and praise when before the House, according to the political bias of the member dealing with it.

Every board of this character, however, depends for its efficiency on its personnel. An indifferent act may under a wise and far-seeing board accomplish wonders, while mediocre officials are fatal to the most perfect machine that human ingenuity can devise. We hear that the Minister of Agriculture is determined to create a board worthy of the great task which lies before it, and if so agriculture in British Columbia will be his everlasting debtor.

Under the new act the province will be divided into districts, and each member of the board will administer the affairs of his immediate territory, while the chairman, who will reside at headquarters, will exercise general direction.

MOVING IN RIGHT DIRECTION

The table of imports and exports which has been compiled by the statistical branch of the Department of Agriculture, and which is submitted by the deputy minister, Mr. Scott, in another column, tells a story of development in the right direction. The sharp decrease in agricultural imports is gratifying, but only as indicating how thoroughly this might be corrected. The example of Alberta where by wise government aid and encouragement the creameries

NEW SILK POPLINS SENT ANYWHERE BY POST

Write for Free Samples.

SHADES—

Russian
Nigger
Navy
Saxe
Copenhagen
Grey
Amethyst
Purple
Old Rose
Pink
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Sky
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White
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Silk Poplin is one of the most popular materials worn by women this year. They are making dresses, suits and coats from it, and no material we have makes up better and none wears better.

You know it is a heavy sort of silk, that comes in all the new shades they are wearing this year, and it washes beautifully.

We will be glad to send samples of any or all shades of Silk Poplin. Please drop a card or a letter and they will be sent by return.

36 inches wide and sent Postpaid, per yard, \$1.45.

SABA BROS., LTD.

Silk Specialists, 652 Granville Street, Vancouver, B. C.

have developed so rapidly that today the heavy imports from New Zealand are entirely eliminated, is an example of how, under wise supervision and the employment of that principle of co-operation on which Mr. Scott so justly lays strong emphasis, this reform can be accomplished.

MOBILIZING FEMALE INDUSTRY

We of British stock are rather slow in our movements, even when under the impulse which a great war affords. It has taken us over two years to realize many things which our more alert American cousins acted upon as soon as their nation became engaged in the conflict. Anyone who has recently visited the cities of Seattle, Tacoma and Portland will realize the promptness with which the residents of those cities have taken up the responsible duty of raising more foodstuffs and striking directly at the more glaring extravagances with which we are so slow in dealing.

Some of the finest lawn and boulevards in these cities have been relentlessly dug up and here, where once roses, azaleas and rhododendrons blossomed, the soil is being tilled around the humble tuber.

A little has been done in our Canadian cities and towns this spring to meet this condition, but it has been on a small and half-hearted scale. Only the pinch of actual scarcity in foodstuffs (and this may come this winter) seems likely to rouse us to the real needs of the case.

In one particular, however, there has been a real effort to cope with a war situation, and here as so often happens, the result is due largely to women. We refer to the provision made for fruit picking in the districts near our coast cities, a provision without which there will surely be cruel waste this summer. Mrs. Kemp of Vancou-

ver and others took hold of this problem in a womanlike way and today the registration roll for Vancouver of women and girls willing to pick berries and small fruits, is climbing up toward the thousand mark.

This is as it should be. British Columbia has no munition factories worth speaking of, in which female hands may be employed, but she has her gardens and small farms where an equally necessary work can be done by those to whom we have not hitherto looked for the performance of such tasks.

CONSCRIPTION

The announcement that the government has decided to enforce service in this country has been received throughout the west in a manner which indicates that the government in this case has not moved in advance of public sentiment. The Quebec situation complicates the problem, and unjust as it may seem, we expect to see that province given the option of being excluded or included as it may desire in the plan, as in the case of Ireland.

Undoubtedly the draft will be administered with a due regard to the importance of maintaining the maximum strength on the land. Lately our farms have been depleted of their best young men and the task of carrying on this important department of war machinery is fraught today with great difficulty. While our young farmers will doubtless be anxious to do their bit we would remind them that while the cities have so many young men who are making little or no contribution to the production problem, those who are asked to remain and till the soil are making the highest possible form of contribution to national service.

Don't Worry!
We Can Take Care
of Your Needs.

PACIFIC BOX

COMPANY LIMITED

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VANCOUVER, B. C.

Berry Baskets
and Crates.
All Kinds of Fruit
Boxes.

Take Care of the Little Pigs

How to Insure the Welfare of the Spring Litter.

With pork at such a high price and with every assurance that no great decline will take place for a considerable time, every farmer should make an effort to prevent losses in the spring litters.

Loss of life is often due to want of a little attention before birth. The care of the litter should commence with the care of the sow during pregnancy. The breeder should try and have his sow in good, vigorous and healthy condition, not too fat and not too thin. Provide a meal ration that is not too fattening, but which contains considerable bone and muscle forming material. The ration of equal parts of ground oats and middlings, or one of equal parts of ground corn, ground oats and middlings, might be suggested. The value of the use of roughage and succulent feeds cannot be over estimated. Not only are feeds of this kind cheap, but they also have a very beneficial effect. Second, cut alfalfa is the very best roughage but clover hay may be used, when alfalfa is not available. Roots from the best source of succulent feed, sugar beets or mangle being the most palatable and beneficial.

It is most important that the sow be housed so that she may take considerable exercise.

About a week before farrowing time the sow should be placed in the farrowing pen. This pen should be shut off from the main part of the piggery, or else put in a separate building so that it may be possible to supply good ventilation, light, fresh air and dryness. The pen should be kept thoroughly clean and it is advisable to scatter some air-slaked lime around.

As farrowing time approaches care must be taken to avoid constipation in the sow. To prevent constipation give the meal as a thinner slop and keep up the supply of roots. It is advisable not to use long straw for bedding, particularly in the case of large clumsy pigs, for the little pigs often get entangled in the long straw and are crushed. Cut straw or chaff may be used, in

any case give only a moderate amount of bedding. A guard rail of some kind should be placed around the wall near where the sow makes her bed.

An attendant should be on hand at farrowing time, but need not interfere unless it seems necessary. If farrowing is prolonged, or if the pigs are weak, remove them and put them in a warm place. Sometimes a pig born apparently dead may be revived by slapping smartly on the side, or by opening its mouth and blowing into it. Chilled pigs may be helped by immersing all except the head in water at a temperature of about 98°F., then rubbing dry and placing in a warm place. When farrowing is completed and the sow becomes quiet, the pigs should be returned and allowed to suck. The sow's meal should be fed in the form of a very thing slop for some time afterwards, gradually bringing it back to a thicker condition. The feeding of roughage and roots should be continued. There is no need of being in a hurry to start feeding the sow after farrowing, but it is advisable to have available some warm water to which a little meal has been added.

Occasionally an unthrifty pig will be noticed in the litter. Examination of the mouth will sometimes show black teeth. The point of these should be snipped off with a pair of small pliers. In the case of a small litter on a large, fat, heavy milking sow, thumps are liable to occur in the litter. The symptoms are a great accumulation of fat at first and later a sort of palpitation, the pig panting like a horse with heaves. The disease may be prevented by cutting down the sow's ration so that her milk will not be so abundant nor so rich, and by making the little pig take exercise.

When the litter has reached the age of about three weeks it is time to commence teaching them to eat. Arrange a small enclosure with a partition of slats so that

REAL PANAMA HATS

FOR MEN AND WOMEN

YOU will make no mistake in buying your Panama here as we carry nothing but the genuine native made South American hat.

The market is well supplied with Panamas from various sources, but there is no satisfactory substitute for these hand-woven hats. We import them direct in the raw and block and trim them in Vancouver.

We are showing some of the most fashionable shapes in Ladies' from \$8.50 to \$20.00. In Men's shapes the prices run from \$5.00 to \$100.00 each.

Mail orders solicited.

T. B. Cuthbertson & Co. Ltd.

Men's Furnishers and Hatters
2 Stores Vancouver, B. C.

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Feed Your Calves at Half Cost



A properly constituted Calf Meal is equal to and better than cow's milk for raising calves, because it takes the place of milk, thus saving 50% of your feed bills.

Lilly's Calf Meal

is thoroughly cooked under 60-lb. steam pressure. It is all food, easily digested, fresh and sweet with that nutty flavor so relished by calves.

Most Dealers sell it. If yours does not, write

Vancouver Milling & Grain Co., LIMITED

Vancouver, Calgary, New Westminster, Victoria

the young pigs can get through while the sow cannot. Place a low trough in this enclosure. Start the pigs on skim milk, if this is scarce, use oatmeal siftings as a supplement. A little care is necessary in starting the pigs on oatmeal siftings, but once started they do exceptionally well on it. A substitute for skim milk that is now coming into favor is tankage.

This is a feed very rich in protein, and should be fed in small quantities in conjunction with shorts or middlings. The proportion of tankage to meal should not be more than one to ten. With a good supply of skim milk, shorts or middlings may be added, gradually increasing the meal as the pigs grow older.

The castration of all male animals not intended for breeding purposes should be performed when the pigs are from four to five weeks old. Weaning may be done when the pigs are from six to eight weeks old, depending upon the condition of the sow and upon how well the litter is coming on. If the sow is in good condition the pigs may be left on until they are about eight weeks old. If the sow is getting rather low in condition it is usually advisable to wean the pigs a little sooner. It is a good practice to wean them off gradually by keeping the sow away for a few hours the first day and gradually increasing this period for a few days. If the little pigs have learned how to eat there will be no difficulty in weaning and they will not be hindered in their development.

THE COST OF FEEDING SOLDIERS

A Western Ontario newspaper points to the administration of the Commissariat department of the Canadian troops now in training as an example of how the high cost of living may be beaten, claiming that in the city of London, Ont., the men are fed for less than the most careful housewives claim they can provide a similar menu.

In London it costs an average of 31.297 cents per day to feed the men during the month of November. If the men had eaten all that the regulations allowed them, it would have cost 34.158 cents a day to feed each. That little saving of 2.861 cents per man per day seemed small in itself, but when applied to some 1,800 men it soon assumes an aspect of importance. In addition to that it goes to show that two and one-half years of war have taught lessons in economy that have not been entirely disregarded.

Many years' experience have shown that a soldier must be well fed. Here is a list of the items allowed a man, together with the quantities:

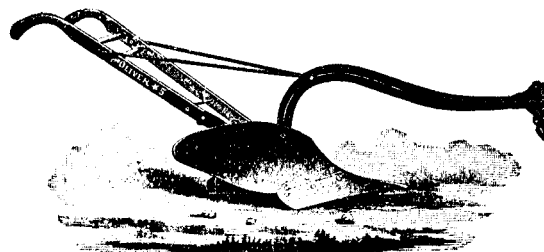
Beef	1 pound
Bacon	3 ounces
Sugar	3 ounces
Milk powder	1 ounce
Fresh vegetables	6 ounces
Bread	1 pound
Potatoes	1 pound
Beans	2 ounces
Jam	2 ounces
Butter	2 ounces
Cheese	1 ounce
Split peas	½ ounce
Salt	½ ounce
Coffee	1-3 ounce
Tea	¼ ounce
Pepper	1-36 ounce

For a change, if the men desire them, they may have in lieu of some of the foregoing, canned vegetables, corned beef, oat-

McCormick Disc Harrows.

McCormick Seed Drills.

McCormick Mowers & Rakes.



Deering Mowers & Rakes

MARK DUMOND

Planet Jr. Seeders.

1048 Main Street,
VANCOUVER, B. C.
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Oliver Plows.

The Vernon Fruit Co., Ltd.

1908.

1917.

The old reliable company that has always made good.

Remember

We are a British Columbia

Company

The only company in the west handling only British Columbia Fruits and Products

Head Distributing Office:

CALGARY, ALBERTA

meal, fish, flour, rice, macaroni, or any of several other things.

In order to offset the saving, a careful account is kept from day to day of the actual amounts eaten by the men. A battalion of 700 men might indent for its full 700 pounds of beef. Possibly the men do not eat the whole issue on that day. The surplus is carefully kept and made up into meat pies or some other dainty, and the next day just enough meat is indented for to provide a satisfying meal. A saving of 75 pounds of meat may be effected. Likewise with bread or potatoes. In the early days of the war any surplus of supplies was thrown away and became a dead loss.

No one would take the responsibility of the amount of food wastage in the early days of the war. Any estimate would probably err on the side of moderation.

Buying in mass, says this newspaper, undoubtedly accounts for the low cost of maintaining soldiers. One of a mass of 5,000 men can be fed more cheaply than any separate individual. If the individual goes into a shop and purchases a pound of meat for himself, he will have to pay more for it than would the army supply officer have to pay for any one of 50,000 pounds purchased for an equal number of men. The same holds good for all purchases.

Beekeeping in British Columbia

By Williams Hugh

NOTICE.

There will be a demonstration at the experimental apiary of the Beekeepers' Association at the Exhibition Grounds, Hastings Park, Vancouver, June 9th, when beginners will be given the opportunity of seeing how three colonies are made out of one. This will be valuable to beginners who wish to increase their stock.

EXPERIMENTAL APIARY AT VANCOUVER EXHIBITION GROUNDS

The Apiary at the above grounds will soon be in running order. The directors of the Vancouver Exhibition Association have generously spared no efforts to make the apiary a success. Messrs. Rennie & Co., Brand & Co., Ritchie & Co., of Vancouver, and Trapp & Co., Ltd., of New Westminster, have all supplied hives for the use of members. The committee has ordered a full compliment of appliances and supplies, so that the beginner as well as the more advanced can see the appliances used by up-to-date beekeepers. Mr. W. H. Lewis will have charge of one colony of his own and intends to demonstrate with it. Mr. John Brooks, the chairman, states there will be addresses upon some phase of beekeeping every week, when the apiary is in running order. There will also be experiments in swarm control, artificial increase, queen breeding and wintering. When demonstration work commences, Bevan Hugh, the secretary of committee, will issue notices through the Vancouver press.

The American Breeders' Association during 1908 wrote, "The tendency among beekeepers is to accomplish by manipulation the thing which would be attempted by breeding, thus instead of breeding for non-swarming bees we have attempts at the construction of hives which provide environments conducive to non-swarming. Instead of breeding for prolificness we have trials at using two queens in one hive to get the same results. Good wintering qualities are replaced by extra care in wintering, and tongue length becomes less important by the use of alsike clover for pasturage in place of red clover, the nectar of which is largely lost to the honey-bee. Activity in honey-gathering is replaced by the keeping of a large number of colonies. As long as the beekeeping field is not more completely filled, these methods of avoiding the breeding problem will be more or less successful. The time should come, however, and probably will, when beekeepers can no longer neglect this live work."

Members of the Beekeepers' Association of B. C. can obtain medium brood foundation at 70c per lb from one of our directors, Mr. Geo. Coe of Messrs. Miller & Coe., 120 Hastings Street West, Vancouver. Members must produce their cards of membership when purchasing supplies and when sending their orders by mail include postage. The foundation is the very best quality, and is a trial order. If the members support the association in its effort to obtain supplies at a reasonable rate, there is no reason why other articles and appliances could not be purchased co-operatively. The above price is a saving of 20c per lb. to the members.

We are favored this month with an article on "How to Increase Honey Production." In a recent issue of The Canadian Beekeeper, Mr. Sladen wrote, "Better and more systematic management of the bees are very important if we would increase our honey output." Again, "It is a mistake to suppose that a few hives of bees will not repay their owner for the time spent upon them as well as does his regular occupation. Frequently they will pay him better if he knows what to do and when to do it—and does it. At the Experimental Farm, Ottawa, each colony in 1916 produced an average of 236 pounds of honey, which was sold for \$34. The value of the bees, hives and supers did not exceed \$15. This shows a profit of over 200 per cent. on the capital, after deducting \$1.50 for sugar for winter feed. The season, it is true, was exceptionally favorable for honey-production from alsike and white clover. The average production of each colony during the past four years, however, has been 106 pounds, sold at \$14.50. Sufficient, however, to give a good return, indeed."

The following beekeepers have recently joined the association—

Miss K. G. Curtis-Mayward, Cowichan; E. J. Brown, Penticton; G. J. Read, Burquitlam; A. G. Warren, Falkland, B. C.; Miss Grace Stephens, Duncan, V. I.; S. E. Davis, Vancouver; Miss A. Cusack, Victoria; Mrs. Sutcliffe, Oak Bay; T. Bennett, Mayne Isl.; Chas. Coates, North Lonsdale.

Members can obtain supplies from the firms advertising beekeepers' supplies in this magazine, and receive a discount. Bee journals can be had at the jobbers' rates through the honorary secretary.

All communications to be addressed to Hon. Sec.-Treas. Williams Hugh, Box 20, Cloverdale, B. C.

For the information of members in the Victoria district, our association wrote the Department of Agriculture asking the co-

operation of the department in arranging demonstrations in bee culture through the fowl brood inspectors. Today I have had no reply. I would suggest you take the question up and no doubt you will be able to have some instruction at an apiary in Oak Bay or Victoria.

I have been informed that American foul brood has again appeared in the vicinity of

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Collingwood. The late E. F. Robinson stated in January 1916 "Canadian Beekeeper" that 54 colonies were affected with foul brood at Collingwood East. "The disease had been and is most likely to continue in B. C." In view of such an opinion by an authority like the late Mr. Robinson, is it not time that some more down-to-date methods be undertaken to control American foul brood than the so-called "heroic" treatment by burning? Editor Dadant of the "American Bee Journal" writes, "Yet, if the transferring is done as carefully as his 'burning', and if the empty hives are carefully singed immediately with a tinner's or painter's gasoline torch, there is no possibility of transmitting disease." By the modern method we save the hives and the bees. Perhaps the Department of Agriculture need men who are able to give the beekeeper information upon the control of bee diseases, the same as is given in other provinces throughout the Dominion.

BURNING HIVES AFFECTED WITH FOUL BROOD

In the "American Bee Journal" for May is a three column article by F. Dundas Todd, describing very fully how he destroys hives and bees affected with foul brood. To sum up the article, the foul brood inspector obtains 30 pieces of wood and makes a fierce fire 20 feet from the nearest tree, and then—"When, therefore, I reach the apiary my first task is to kindle the fire, so arranging the wood that the whole will be a mass of hot coals when I want to use it. I want the earth in the bottom and sides of the cavity to be very hot, so that all water will be quickly evaporated.

"The fire burning freely, I attend to the smoker. In my first adventures I tried the smothering system of our forefathers, digging a hole, starting a small fire and adding sulphur, then straddling the fire with the hive without a bottom-board.

"The first downpour of bees simply drowned out the fire and maimed bees were crawling everywhere. Then I turned to the smoker. I had heard that just a whiff of burning sulphur would almost instantly smother every bee of the colony; but I want to assure my reader that is far from being the truth, for even with a powerful blast of sulphur fumes one cannot kill all the bees in less than three minutes. When I have to kill bees, I try to do the job as speedily as I know how. A weak colony can be wiped out in a minute, but a hive of 200 frames covered with bees is another story, for the instant they fall off the combs they choke the air passages, cover up each other, and so prevent the fumes reaching every cranny of the hive.

"It is the first few blasts that count above all things, consequently the problem is to have plenty of burning sulphur in the smoker burning so freely that it is simply a molten, blazing mass. To attain this, start the smoker with just a little rags and work the bellows until the fire is burning freely, then drop in several small pieces of rock sulphur

and get them burning just as well; then add more until you have about a quarter of a pound in all. In a little while smoke will cease to issue from the nozzle, blue flames will be common and the gas will issue from the explosive force.

"I find it advisable, though seldom necessary, to wear my working bee suit, including gloves, for, if the hive be the least rickety, bees will leak out at unexpected places and I kill them with the fingers of the left hand as fast as they appear.

"All ready, I kneel in front of the hive and place across the entrance a piece of lath, cut about an inch and a half shorter than the full entrance, leaving the blank at the right. Into this space I push the nozzle of the smoker and pump steadily and persistently until all noise in the hive ceases. To make cure of inside conditions I generally place my ear against the side of the brood chamber, and when all is quiet I proceed to the next victim.

It is very important for the inspector's comfort that he inhale none of the fumes, so I generally endeavor to choose a night when the wind is from a southerly direction. But such ideal conditions are not always obtainable. For instance, last summer in Vancouver north winds were persistent for weeks, so twice I inhaled considerable sulphur fumes on account of a sudden change in the direction of the wind. I usually lie full length with my head to the left of the hive and face turned away; but even with these precautions I was caught. The result in my case is that for about three days after being 'gassed' I am very languid and do not feel fit for much exertion.

"The bees all smothered, I carry the first hive to the fire, bottom-board in position, setting it down, I remove the cover, turn it upside down and lay it to the left. Then I lift the hive off the bottom-board carefully and set it on the cover. On the bottom-board lie the dead bees, many thousands of them when the colony is strong. Lifting the board I shoot the bees into the fire, which ought to be now a solid mass of glowing embers. At first the fire will deaden, but as soon as it brightens up I lift the hive and set it squarely in the centre, then strip off the quilt so that the space between each pair of combs becomes a chimney. In a few minutes there is fierce hissing as the water runs out of the brood and honey; but in a few minutes a really strong fire will overcome all that. So I now set bottom-board and cover by the side of the body, and then carry in the next hive to repeat. By this time the burning wax gives a powerful heat so that one can pile up all the rest just about as fast as they can be handled.

"The chief reason for digging the hole is to make certain that no honey can escape. The embers from the firewood and hives easily fill the hole and burn everything combustible. The beekeeper generally fills it in before retiring so as to avoid all risk of fire on the premises."

Editor Dadant on the above illuminating article—

"Mr. Todd uses the heroic treatment for foul brood. He has repeatedly told us that he does not believe in trying to save the bees or the hive of an affected colony. Of course, where there are only two or three cases and they are bad, and one does not wish to be bothered with much work, it may be advisable. Yet, if the transferring is done as carefully as his 'burning' and if the empty hives are carefully singed immediately with a tinner's or painter's gaso-

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We welcome enquiries from amateurs concerning advisable equipment for beekeeping and will cheerfully advise them as to equipment, etc.

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Langstroths on the Honey Bee, for \$1.50

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BEVAN HUGH

Cloverdale, B. C.

Member of Bee-Keepers' Association of B. C.

line torch, there is no possibility of transmitting disease. By all means save the hive. But it is better to burn up the honey and the combs of the diseased colonies."

How to Increase Honey-Production.

With the price of sugar high and a possible shortage of it in the near future, bee-keepers are facing a heavy demand for the new crop of honey, and there is an urgent call for increased production. The principal ways in which the situation may be met are the following:

1. The adoption of modern apriay equipment and practice by bee-keepers that are not employing these. There are many apiaries in good regions for honey-production, more particularly in Eastern Canada, in which the colonies, now in box hives or in seldom-opened frame hives producing from 20 to 40 lbs. of honey each in an average season, could be made to produce 80 to 100 lbs. or more if well managed in frame hives. If time cannot be spared to give these bees the attention they need, they might be transferred to a member of the family who would take an interest in them, or they might be sold to a professional bee-keeper. But bees, well cared for, often pay as well as, or better, than the regular occupation, considering the amount of time spent with them. The modern methods of bee-keeping are briefly described in "Bees and How to Keep Them," a bulletin of 56 pages issued by the Dominion Department of Agriculture, Ottawa. A good way to become acquainted with bee-keeping methods is to attend one of the apiary demonstrations that are held early in the summer by several of the provincial bee-keepers' associations. A list of bee-keepers' associations, with the addresses of the secretaries, is given in the above-mentioned bulletin.

2. The production of extracted honey in place of comb honey. A colony of bees will produce about twice extracted honey as comb honey, and the demand for extracted honey, which already much exceeds that of comb honey, will probably be still greater this year. Two-comb honey supers may be used as a deep extracting super. It will be wise to save some combs of good honey for wintering, because sugar may be difficult to obtain in the autumn.

3. The expert bee-keeper in a good location should consider increasing the number of his bees to the utmost in time for the honey flow, so as to make the most of his valuable knowledge of how to keep bees. Unsatisfactory queens should be replaced early. Dividing strong colonies not less than seven weeks before the middle of the main honey flow will increase the population in time, providing a fertile queen is on hand to be given to the queenless part. These queens may be procured from breeders in the southern States at 80c to \$1.00 each. This procedure, which will also check swarming, is chiefly applicable to the fireweed and goldenrod honey districts. As a rule, the clover honey flow comes too early for it. The purchase of bees in lots of two or three pounds, with untested fertile queens from the south, in May or early June at about \$3 each, usually proves a good investment if the bees arrive in good condition and can be placed on combs.

4. This year it is more necessary than ever to order bee supplies early, and in sufficient quantity to cover all the needs of the season. Especially should there be enough supers, frames and foundations, or combs, to keep the bees fully employed in honey-gathering throughout the season, and



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a sufficient supply of suitable containers for the honey crop. One of the chief causes of swarming and a restricted honey crop is an insufficient number of supers. Particulars of an attractive container for honey that has been designed to meet a possible difficulty in obtaining sufficient in pails or

glass jars will be supplied on application to the apiarist, Central Experimental Farm, Ottawa. Beeswax is scarce and all discarded combs and scraps of wax should be saved to be made up into foundation.

Continued on Page 28.

Gardening for the Home.

By H. M. EDDIE, F.R.H.S., Manager Growing Department, B. C. Nurseries.

Vancouver's rose show is now within measurable distance and fanciers will now be watching their plants with suspense and expectation. To be able to have a certain rose in perfect shape on a certain day requires some skill and long experience, and a faculty for keeping and comparing notes. The beginner must experiment for himself, take copious notes of dates when pruning and disbudding has done, the prevailing weather conditions and the date on which the rose under observation was at its best and compare notes year by year for guidance.

There is no royal road to success in rose-growing, and as the weather conditions enter largely into the question and are so uncertain, it can easily be seen that the timing of a certain bloom for the show table can not be reduced to a mathematical exactitude.

Although the element of chance enters largely into the subject, still there are many things that can be done to help or hinder things; and the degree of success obtained will largely depend upon how much this element of chance is eliminated.

The pruning of roses has been attended to some weeks ago, and disbudding should also have been done by now; but it is not too late yet to perform the latter operation; on a weak-growing plant it may be advisable to allow only one shoot to develop if a bloom is wanted for show. Therefore, the most promising bud should be selected and all the others rubbed off. Stronger plants may have two, three, four, five or more shoots allowed to develop, depending on the variety and robustness of the plant.

It is often apparent weeks before the show that a flower on a certain shoot is going to be over before that time, and if this particular variety is required and there is no other plant to depend on, one of two things can be done. If there is another and more backward shoot coming from lower down, the forward one can be removed in its entirety and all the energy thrown into the later one, or if the shoot is showing lateral flower buds below the terminal one, the latter may be pinched out and one of the later buds allowed to develop in its place; this will often make a difference of a week or ten days; but the flower from this lateral will not be quite as good as the terminal one would have been.

If the opening of the flower is going to be just a day or so ahead of time, elastic bands are sometimes used to prevent opening; but little dependence can be placed on this method, as the bloom will often fall to pieces when the band is removed. The bands should not fit too tightly and should be left on until the final staging on the day of the show. From now on much may be done to assist the plants in doing their best by keeping them free of pests of every description; a thorough spraying with the hose every evening will usually keep the foliage clean if all other conditions are right; but if, by any chance,

the plants should get infested, phytomyline or abol conscientiously applied, according to directions, will usually effect a cure.

Roses must never suffer from want of moisture at the roots, and remember that a thorough soaking once a week is better than a slight sprinkle every night; and, be-

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Early Valentine Bush Beans, ready to pick in 35 days, 4 ozs. 15c, lb. 40c.
 Early Model Blood-red Table Beet. Pkg. 10c, oz. 20c, 4 ozs. 50c.
 First and Best Cabbage, solid heads. Pkg. 10c, oz. 30c, 4 ozs. 90c.
 Early Gem Red Table Carrot. Pkg. 5c, oz. 25c, 4 ozs. 65c.
 Citron for Preserving, red seeded. Pkg. 5c, oz. 15c, 4 ozs. 40c.
 Early Malcolm Sweet Table Corn. Pkg. 10c, lb. 40c, 5 lbs. \$1.90.
 Prize Pickling Cucumber, great cropper, Pkg. 5c, oz. 20c, 4 ozs. 50c.
 Earliest Wayahead Head Lettuce. Pkg. 10c, oz. 30c, 4 ozs. 90c.
 Early Hackensack (Sugar) Musk Melon. Pkg. 5c, oz. 20c.
 Richard Seddon Bush Garden Peas. 4ozs. 15c, lb. 40c, 5 lbs. \$1.75.
 Earliest Scarlet Olive Radish. Pkg. 5c, oz. 10c, 4 ozs. 30c.
 Extra Early Milan Turnip (earliest grown). Pkg. 5c, oz. 20c, 4 ozs. 50c.
 Giant White Feeding Sugar Beet, for cattle. 4 ozs. 20c, 1-2 lb. 35c, lb. 65c.
 Rennie's Giant Yellow Intermediate Mangel. 1-2 lb. 35c, lb. 65c.
 Rennie's Derby Swede Turnip, for stock feed. 1-2 lb. 45c, lb. 80c.
 Improved Jumbo Swede Turnip (Elephant), 1-2 lb. 45c, lb. 80c.
 Rennie's Kangaroo Swede Turnip (very hardy). 1-2 lb. 45c, lb. 80c.
 Northwestern Smoky Dent Seed Corn. 100 lbs. \$7.50.
 High Grade Compton's Early Yellow Flint Seed Corn. 100 lbs. \$8.00.
 High Grade Leaming Yellow Dent Seed Corn. 100 lbs. \$6.75.
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sides, a thorough soaking acts as a ventilator by drawing out the old air and being followed up by fresh. Hoe the surface of the beds frequently and if the plants should lack vigor or color in foliage, give a dressing of two ounces of nitrate of soda to the square yard after watering.

Other summer flowers will now require attention; some may require stakes and string to keep them from being blown about and broken by wind. But as little staking as possible ought to be done, so as to preserve the natural habits of the plants as much as possible. Annual flowers will now be well up and must be thinned out to give plenty room for development—one well-developed plant will give better satisfaction than half a dozen crowded ones.

Early in the month is a good time to sow seeds of biennials, such as pansies, forget-me-nots, Canterbury bells, wallflowers, etc. Sow a few seeds of each on fine mellow soil in an out-of-the-way corner, and when showing their third leaves transplant into a bed of rich, well-prepared soil three inches apart each way, giving the wallflowers double that distance. They will make good plants for planting out this fall or early next spring.

Things are rushing fast in the vegetable garden, and much work has to be done. Early potatoes will be well up now and will require hilling. Hoe between the rows the day before hilling, to kill the weeds, and when hilling draw the soil from between the rows well up to the necks of the plants—the hand cultivator with the plow attachment is a very useful implement for this purpose, and by going about three times around a row of potatoes a good drill can be thrown up more easily and quickly than with the hoe. The idea in hilling is to get a good length of stem underground, as it is from this part that the tuber-bearing shoots arise. If the seed was planted deep, say four inches, hilling is not so much required as where seed was planted only two inches deep. A watchful eye must be kept on all plants of the cabbage tribe to guard them against attacks of the maggot; especially where the plants were not given the protection of a tarred paper disc at planting time. Frequent spraying of the soil around the necks of the plants with kerosene emulsion will successfully ward off the fly responsible for the trouble. This is the month when most vegetable crops require thinning; and, as this important operation is often overlooked, I will mention a few of the principal vegetables and the distances apart they should be in the rows. When planting or thinning it is well to carry in your mind's eye a picture of a fully developed plant of the particular kind in question and distances will be a guide in dealing with the several crops: Beans, kidney, 8ins.; beans, broad, 6ins.; beets, turnip rooted, 6ins.; beet tap rooted, 4ins.; carrots, 4ins.; lettuce, transplant to 9ins.; onions, picking, 1in.; onions, globe, 4ins.; parsley, 6ins.; paspnips, 5ins.; turnips, 6ins.

The fruit garden, on the whole, looks promising, but raspberries and loganberries in the Chilliwack valley, at least, suffered badly with the severe winter, and will give poor returns this year, and in this connection it is worthy of note that the

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Kaslo, March 12, 1917

"I got for myself last Spring a tin of Phytophiline No. 3, postpaid, price 85c. I used this on a couple of young peach trees for leaf curl with very satisfactory results, and would like to get a small assortment of the different kinds.

GEO. STOTT,
Manager for Byers, Giegerich, Green Co., Ltd.

Marlboro came through practically unscathed, while the Cuthbert suffered badly.

Strawberries are showing well and must be bedded with straw before the swelling fruit weighs the clusters to the ground, else much labor will be entailed in having to lift each cluster to get the straw underneath.

RE INSTITUTE FLOWER SHOWS

Madam,—It gives me pleasure to inform you that the Hon. the Minister of Agriculture has authorized certain expenditures by this department whereby assistance will be given to Women's Institutes holding flower shows during the present year.

The assistance to be given will be as follows:

(1) A per capita grant of 25c in addition to the grant given under the terms of the Agricultural Act, 1915, will be given to institutes holding a flower show, or an exhibition of women's work or a combined flower show and such exhibition.

(2) Prizes will also be offered by the department for competition at such shows for collections of bulbs, sweet peas, roses, dahlias, perennials or other varieties of flowers as may be decided upon by the institute. The prizes will consist of suitable books awarded by the department, as follows:

Adults—First and second prizes.

Juveniles—First, second and third prizes.

In the case of adults, no prizes will be awarded where there are less than three entries, and no second prize will be given with less than five entries. In the case of juveniles, no prize will be given where there are less than two entries, no second prize with less than three entries, and no third prize with less than five entries.

I enclose herewith application form, which, if you intend to hold a flower show, should be filled in and mailed to this department immediately. No applications will be considered later than June 30th, 1917. I am, madam,

Your obedient servant,

WM. E. SCOTT,

Deputy Minister and Superintendent of Institutes.

CHILLIWACK

FOR SALE—House and large lot in Chilliwack, "the garden of British Columbia"; seven-room house, electric light, city water, garden full of flowers, fruit and vegetables; five minutes' walk to postoffice and cars; fishing the year round; shooting in season; fifteen swarms of bees in Langtrotth hives, producing hundreds of pounds of honey. See owner on the place. M. J. Henry, Chilliwack.

GROW BEANS IN EVERY HOME GARDEN THIS YEAR.

Beans are a warm weather crop and may be planted any time after the ground becomes fairly warm and when there is no danger of frost after the plants are through the ground. The growing season extends from May to September.

There are three distinct kinds of beans, string, green shell and field. Any average soil is good for the cultivation of the string bean, and a succession of plantings should be made. Either the yellow or green pod variety may be used. Plant about three inches apart in rows and covered to a depth of two to three inches.

The green shell or bunch bean is planted in hills and a pole is placed by each hill on which the vine may climb. These beans are usually taken from the pods just before they are fully matured, though they may be left in the pod until fully matured and then dried.

The field beans are never taken from the pods until fully matured. These are more often a field crop, the planting, harvesting and threshing being done by machinery. There is much danger of field beans rusting if there is a large amount of heat and rain, and if the weather is dry the pods will not fill, due to imperfect pollination.

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POULTRY SECTION

PRODUCE MORE EGGS

How to Increase the Output and Lower the Cost

(By F. C. Elford, Dominion Poultry Husbandman.)

Canada wants eggs and more eggs. Never were the prospects for a bigger demand and better prices more promising than right now.

In spite of this, with the cost of grain high and the prices for poultry meat good, the tendency will be for farmers and poultrymen to sell stock that should produce the high-priced eggs this winter. The fear is that eggs cannot be produced at a profit; but, though a good price can be obtained for the meat at present and high prices will have to be paid for the feed, eggs will be correspondingly high and eggs can be produced at a profit even with the high prices of grain, if proper conditions are supplied.

Cost to Produce a Dozen Eggs.

Last winter at the Experimental Farm a pen of 100 pullets, whose per cent. egg yield by months ranged from 5 per cent. in November to 50 per cent. in April, an average of 27 per cent. for the six months, produced eggs at a cost of 24c per dozen. The percentage of egg yield determines more than anything else the cost of production. For instance, when the egg yield was 20 per cent. the cost was 21c per doz., and at 40 per cent. yield the cost was only 10½c per dozen.

This pen was selected as it was thought to be equal in production to an average farm flock. The average dozen eggs sold for 20c more than the cost of feed required to produce it.

Each hen gave 99c over cost of feed in the six months, which, though not large, shows that even at the high price of feed, eggs can be produced at a profit. The prices paid for grain were local Ottawa prices and were high. The price received for the eggs was 44c per dozen. This was not as high as the local market and no higher than many farmers obtained during the same time. But the farmer in addition might cut down cost, for he has table scraps, milk and other feeds that may be used which were not available here. To make a profit this year, business methods must be adopted and a few suggestions that may help follow.

Kill All Non-Producers.

Keep only the best pullets for eggs, and the best year-old hens for breeding. For good chicks must be produced next spring, as well as eggs this winter.

More than ever it will be advisable to get rid of everything that does not produce. Market pullets not matured enough to start laying before early winter. Sell all the hens that are more than two years old; also all cockerels that are not intended for breeding purposes. If the cockerels can be kept until later and well fed, a bigger price will be obtained; but better sell all now than take up space required by the early pullets.

Housing.

See that the house into which the birds go is suitable. Have plenty of sunlight and fresh air. Keep all draughts out and be sure it is dry. See that the front of the house, from eighteen to twenty inches above the floor, has glass and cotton, one-third glass to two-thirds cotton. Make

No Such Thing as "Cheap"

Chick Food

To sacrifice quality for price simply means "taking it out on your chickens," which in the long run is by far the most expensive way.

Royal Standard Mills Chick Food

Is not a "high-priced" food, but it IS a food that will nourish and bring to a sturdy, energetic maturity. Made from the very cleanest, choicest grains. Contains high percentage of protein—the food element that builds bone, flesh and strength. Positively will not "scour" young chicks and cause mortality. Feed this to your chicks for the best results.

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these windows so that they can be opened up every day if desired. Shut up all holes in every part of the house that might cause a draught. Double line the north side so as to give the hens greater protection while on roosts. If the house is inclined to be damp, more ventilation helps. It is also a good plan to put in a straw loft. If this cannot be arranged, because of the nature of the roof, tack slats below the rafters, then stuff straw in between. See that the house is perfectly clean and free from mites, then get the pullets in at once.

Do not overcrowd. Give an average of five square feet of floor space to each bird of the heavy varieties and four to the lighter or Leghorn type. If there are too many pullets for the available space, cull out the poorer ones. Fifty pullets, with sufficient accommodation, will give more eggs than sixty in crowded quarters.

Feeding.

The question of feed is the hardest one to solve this year, because practically all feeds are high. It will pay to feed the pullets well from the start, though the hens might be fed more lightly until the middle of January. Where possible, use feeds grown on the farm. Good wheat screenings, shrunken wheat, barley, oats, or buckwheat, all make suitable feed. Clover and milk cover a multitude of feeds and cut down the cost. If these can be fed, animal foods, such as beef-scrap, may be curtailed or dispensed with. High-priced mashes may be eliminated and cheaper ground feeds such as bran substituted. Two or more of the grains may be mixed in equal proportions for the grain rations. The mash may consist of ground barley and oats, or bran may be added. If grain has to be purchased, cracked corn is as cheap as anything and makes a suitable addition to any grain ration. Bran is as cheap a food as one can buy for the mash.

HOME GROWN SEEDS

Larger stock than ever, B. C. grown. To introduce them we mail to your address, anywhere in Canada, forty 5c. packets for \$1.00. Price list of seeds in bulk, plants, trees, bee supplies, etc., free.

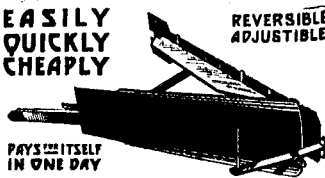
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The mash can be fed dry in a hopper or mixed with milk and fed moist once a day. Any table scraps should be used in the mash. If milk is not available, beef

scrap or other animal food should be fed in the mash. In a good heavy litter, feed a mixture of the grain so that they will always have some in the litter, but not so much that they can get a crop full without scratching for it. In the Prairie Provinces there is considerable shrunken wheat available. Shrunken wheat, if it is dry, is as good a poultry food as wheat fit for milling purposes. Care must be taken that it is not damp or otherwise spoiled. Shrunken wheat alone, if there is no other grain, will answer for the grain feed. For the mash use bran, middlings or chopped oats. Elevator screenings, free from black seeds, make a good feed for either grain mash. If alfalfa or clover can be had, by all means give the leaves to the hens.

In Central Canada, Ontario and Quebec grain is scarce and it is likely some will have to be purchased. If there is feed wheat from the west available, it should be used. Cracked corn may be purchased locally, such as barley and buckwheat, might be used. Bran can be used in mash feed and the good crop of clover in Ontario and Quebec will do much to cut down the cost of the ration. The clover may be fed dry or steamed and used in a mash.

In the Maritime Provinces, where grain is usually purchased for the poultry, the same advice may be given as that for Central Canada, not forgetting the clover and milk. If small potatoes can be had for poultry feed, they may be boiled and fed in the mash.

In every case, grit and shell should be before the layers at all times. In some localities the grit can be secured from the

local gravel pit and in other cases sufficient lime can be secured to do without the commercial shell. If neither of these is available, they should be procured and as much given to the birds as they will eat.

It does not pay to stint the layers. If they do not get the feed they will not lay the eggs. As a rule, a laying hen will not get too fat. Therefore, feed the pullets well. If green cut bone is available and there is no milk, the former may be fed to the pullets at the rate of about half an ounce each per day. The proportion of grain and mash usually eaten is from two to four of grain to one of mash.

FARM POULTRY

The farm flock always pays when given proper care. Production here might be materially increased with very little additional labor or expense. Adopt system in your work, and put the management of the poultry plant into the hands of a boy or girl. One farmer in Eastern Ontario made \$4.00 per cwt. out of his feed grain by selling it as new laid eggs. If one can do that, others can. Feed is dear; but so are eggs.

Breed from bred-to-lay strains; market the eggs when new-laid; distribute the sale of table poultry over as much of the year as possible; cull out the weaklings and feed intelligently. Increased production will follow, resulting in a larger surplus to meet Great Britain's demand for eggs.

POULTRY NOTES

It is more important to know the work of the individual hen than the average of the flock.

There is no foundation for the assertion that the "sweet, rich flavor" of the egg belongs to the breed. That condition can only be brought about by the quality of the food.

There is a decided difference in the weight of eggs from pullets and hens, and of those laid by different breeds. These figures are approximately correct: Single comb Brown Leghorn pullets, 17½ ounces per dozen; hens' 21½ ounces. Light Brahma pullets, 23½ ounces; hens, 23 ounces. Black Langshan pullets, 24 ounces; hens, 26½ ounces. Pekin duck, 35½ ounces.

The question of feeding flavor into eggs was practically settled some years ago by a professor, who tried feeding onions to hens, with the result that the eggs of all those which ate the onions showed a more or less distinct flavor. Therefore, it appears that to get fine flavored eggs it is necessary to restrict runs enough so that no considerable amount of the food can be of such a character as to yield ill-flavored eggs.



A Breeder's Card this size will cost only \$1.25 per month. Advertise the stock you may wish to sell.



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Sixth international egg-laying contest, held under auspices of the Provincial Department of Agriculture at the Exhibition Grounds, Victoria, B. C., from October 6, 1916, to October 5, 1917—12 months. Seventh month's report for month ending May 5, 1917.

Class I—Light-weight Varieties, Six Birds to a Pen.

Pen No.—	Name and Address.	Month's Eggs	Total Eggs
1.	J. O. M. Thackeray, Chilliwack, B. C...White Leghorns—First..	142	610
2.	D. Edwards, Somenos, V.I., B. C.....White Leghorns	126	493
3.	A. V. Lang, R. R. 3, Victoria, B. C....White Leghorns	103	382
4.	Norie Bros., Cowichan, V.I., B. C....White Leghorns	145	479
5.	Mrs. F. C. Kenward, Invermere, B. C..White Leghorns	121	402
6.	W. McEwen, R. M. D. 1, Duncan, B.C...White Leghorns—2nd....	125	556
7.	W. Bradley, Maywood, V.I., B. C.....White Leghorns	127	447
8.	Graves & McCulloch, Saturna Isd., B. C.White Leghorns—3rd....	136	501
9.	Mr. and Mrs. R. W. Chalmers, Thrums, B. C.....White Leghorns	109	412
10.	G. O. Pooley, R. R. 1, Duncan, B. C...White Leghorns	136	442
11.	Madrona Farms, R. R. 4, Victoria, B. C.White Leghorns	132	400
12.	F. E. Pullen, Whonnock, B. C.....Anconas	122	451
13.	H. A. Hincks, Langford Sta., B. C.....White Leghorns	114	368
14.	E. G. Golding, Qualicum, B. C.....White Leghorns	80	304
15.	M. H. Ruttledge, R. R. 2, Sardis, B. C..White Leghorns	126	449
16.	H. Dryden, Corvallis, Oregon	140	456
17.	J. L. Smith, Shawnigan Lake, B. C...Buttercups	132	435
18.	L. M. Ross, Cowichan, B. C.....White Leghorns	129	435
19.	H. Colbourn, 49th Ave. W., S. Vancvr..Black Minorcas	115	289
20.	F. Hoey, R. M. D. 1, Duncan, B. C...White Leghorns	118	412
21.	P. D. Hillis, Rocky Point, B. C.....White Leghorns	145	405
Totals		2623	9128

Class 2—Heavy-weights

22.	W. H. Mahon, Duncans, B. C.....Wyandottes	110	451
23.	W. H. Willins, Stannard Ave., Victoria. R. C. Reds	115	381
24.	W. H. Catterall, Mt. Tolmie, Victoria..Wyandottes	110	529
25.	V. T. Price, Cowichan, B. C.....S. C. Reds—3rd	137	630
26.	J. P. Wood, R. R. 1, Cowichan Bay....S. C. Reds	118	473
27.	G. D. Adams, Box 840, Victoria, B. C...Wyandottes—1st	104	684
28.	Norfolk Farms, St. Williams, Ont....Barred Rocks	108	467
29.	R. N. Clarke, Vernon, B. C.....R. C. Reds	119	489
30.	F. Barr, Colquitz, near Victoria, B. C..Wyandottes	110	493
31.	J. B. Bloore, Chilliwack, B. C.....Wyandottes	94	377
32.	A. L. Lowe, Lake Hill P.O., B. C.....S. C. Reds	106	448
33.	P. S. Lampman, York Place, Oak Bay.S. C. Reds	147	538
34.	E. D. Read, Duncan, B. C.....Wyandottes	116	617
35.	S. S. Blackman, R. M. D., Sidney, B. C.S. C. Reds	151	441
36.	A. W. Cooke, Kelowna, B. C.....Buff Orpingtons	106	493
37.	Dean Bros., Keatings, B. C.....Wyandottes—2nd	108	671
38.	Regan Bros., 78th Ave., Edmonton, Alta.Buff Orpingtons	117	568
39.	F. W. Frederick, Phoenix, B. C.....R. I. Whites	123	606
40.	D. Gibbard, Mission, B. C.....Barred Rocks	91	465
Totals		2190	9821

Price of eggs, 33.1c per dozen. Temperatures—Highest, 73 degrees; lowest, 35 degrees, mean, average. Rained on seven days; several fine sunny days.

Pen 16 laid 7 eggs in one day. B. C. P. A. diplomas.

Class I—Pens 4 and 21 (tie), 1, 16. Class II—Pens 35, 33, 25.

Broodies, Class II—Pens 31 (5), 22, 28, 38 (4), 24 (3), 26, 32, 34, 37 (2), 23, 25, 27, 29, 33, 39, 40 (1).

In Class II, all diplomas were won by S. C. Reds this month, Pen 35 laying the largest total for any month during present contests.

Total eggs laid, 18,949, values at \$710.58, at 45c per dozen.

J. R. TERRY, Director.

W. H. STROYAN, Poultryman.

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Oregon & California Railroad Co. Grant Lands, title to same revested in United States by act of Congress dated June 9, 1916. Two million, three hundred thousand acres to be opened for homesteads and sale. Timber and agricultural lands. Containing some of the best land left in United States. Now is the opportune time. Large sectional map showing lands and description of soil, climate, rainfall, elevations, etc., postpaid, one dollar.

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THE PROSPECTS FOR POULTRY BREEDING IN CANADA

(By ROY GUILD.)

I have had 17 years experience in breeding pure bred poultry and distributing same throughout the Dominion, and should know more than I do or am able to tell you about this great industry. When I started in the business eggs were selling at this time of year in our local markets at from 23c to 25c per dozen. The summer prices ranged from 11c to 13c per dozen. 10c per pound was a good price for nice well fattened spring chickens and still we made a living and some to good. In looking over my order books, I find that in 1900 I sold good breeding males at from \$1.50 to \$2.50 each. Out of this we paid advertising, office expenses, feed bills, living, etc., and had some to spare. Those were the days when economics were in fashion. Long hours and hard work was our motto. Today everything is changed. We no longer buy eggs and poultry at the prices just mentioned. Today prices of fresh eggs have mounted so high that you require an aeroplane to go up and investigate. The price of grain is also high but not out of proportion with other things. We are living in a very fast age. Today it is, inquiry, prompt answer, sold! Demand greater than production.

Canada is ideal for the poultry business. The competition is not overly keen, nor will it be for many years to come. It will keep us all busy to keep abreast with the demand which is ever increasing. Our exports far exceed our imports this year and will continue to do so for many years, until Europe regains her normal conditions and that may never be in our time. This world struggle has not only depleted the man power of Europe but to a much greater degree, its producing power. The live stock and poultry branches have perhaps suffered more than any other. Now that we have an established market, let us keep it by producing the best quality. Prices will not be lower than at the present, until the supply is sufficient to meet the demand. I think I am safe in saying that the supply of mand, while other commodities remain at the present prices. Poultry breeders have for some years past been enjoying a liberal patronage for breeding stock as well as for eggs and dressed poultry, and those of us who have been far sighted enough to do our best for our customers have every reason to look forward to still better days in the producing of our pure bred stock. Our country is in its infancy as regards production of pure bred poultry. They are just becoming acquainted with the fact that mongrels do not pay the handsome profits which pure bred birds do. And it is to the very able provincial college and district representative staff that we have to extend our thanks. Dotted all over this Dominion in every province, are our magnificent experimental farms, equipped to the minute with the finest staff of professors on this or any other continent. These men stand at your elbow to impart to you any information that you may require and there is no class of men more prompt to attend to your claims than they are. Seized with the importance to the office to which they have been appointed, they take a special pleasure in seeing their branch progress. So I say we have nothing better to wish for than the liberal support of our brothers in these offices. The field is broad and the opportunities wonderful. The harvest should be abundant for those who embark in this most delightful occupation, poultry breeding. There is another phase of this sub-

ject I wish to speak about, and that is our duty to the empire as poultry breeders. We evidently have not all enlisted to take our place among those who are today standing upon the battle fields, fighting for the liberty we hold so dear and for which so many of our boys have made the supreme sacrifice, but we can as truly assist the empire as if we were at the front. These are strenuous times and there is no time to be left go to waste.

We must produce to our full capacity. Every man of us owes much to the empire to which we belong and every acre of land should be made to produce to the last pound that is possible. Whether we are old or young this is no time to retire. With more ardor than ever before must we push forward the work of our chosen occupation. Food stuff has become scarce the world over and if we cannot go to the front we can stay at home and do our best for humanity. After this war is over, I prophesy an enormous emigration to this fair Canada, perhaps the fairest country in the world today. With every prospect before her with her forests, mines, fisheries and other industries, and above all her millions of broad acres awaiting the coming of the plough and reaper. With these allurements, Canada will have the greatest emigration after the war that is possible for us to conceive. Are we prepared to supply these new-comers with stock, implements, furniture, clothing, etc.? Are we, as poultrymen, prepared for that enormous trade which is surely coming? Canada has advertised herself wonderfully in this war. Imagine those British soldiers who get only a little better than one shilling a day being wise to the fact that our boys are getting \$1.10 a day. Do not think that they will look upon this fact as significant of a land of plenty? The boys who have enlisted from banks, light trades and even professions and whose places have been filled by women and girls, are not likely to return to their former occupation. They will come to Canada, the land of the maple, where they can hew for themselves homes of happiness and plenty and live out in God's sunshine and fresh air. Before the war Canada was very little known throughout Europe, even in the United States people had a strange idea of us. A friend was visiting in Los Angeles some ten years ago. While there, she met a southern lady who wished to know something about this country, and this is the fashion after which she addressed my friend:

"So you are from Canada, the snowbound country. They tell me the people there dress in skins of animals." My friend, who is very sedate, answered: "And do I look as if I dressed in the skins of animals?"

Now the world is beginning to realize that we have a wonderful heritage and so we have. We live in better homes, sleep in cleaner beds, eat better food, dress better, have a better educational system, purer laws and have better prospects for agriculture than any other continent. I must not say we are the salt of the earth, but I will say that we will be if we watch our P's and Q's. Are we prepared to meet this coming tide of emigration and with its coming to reap the harvest which will come through the demands these new-comers will make upon us for pure bred stock and poultry, especially poultry. This is the time to buckle on the armor of progressiveness and assist the empire in the greatest struggle the world has ever known. For your own prosperity, for the good of the empire, increase your supply of pure bred poultry and eggs at a time when every government official and every loyal Canadian stands ready to assist you and make your venture a success.

Some here may ask what is a safe estimate of profits per hen at the present price of grain. Several times I have made this test and can only say that it depends on the man, the methods, and the strain more than it does on the price. I have known some men to go into the poultry business in such a hap-hazard fashion that there was nothing but failure, but I have never known a man to enter the business who went at it as if he meant it, but who was to some greater or lesser degree successful. If you enter the poultry business, do not think you are going into some gold brick scheme where you can afford to fold your hands and await returns. You will be entering a business which will demand close attention but will pay you a larger profit for the time spent than any other agricultural pursuit. The work is not laborious but constant, and most pleasant if you are really interested.

If you are at present in the poultry business, go home and plan to increase your output 100 per cent. If you are not in the business, get in it at once and establish yourself so as to reap your share of the harvest which is surely coming.

If you are a farmer with a small block for home use, increase to 100 or 200 of a good laying strain. There is perhaps no place that poultry is kept at such a low cost as on the farm. They pick up a great part of their food which would otherwise go to waste. I am not going to tell you that I have made such a wonderful success of the business for I can look back and see where I could have done much better. I am not dissatisfied, however, and I do not know of any business I would rather be in.

NOTICE HIDES WANTED

We wish to call farmers' attention to the fact that we are now in a position to purchase HIDES for the Fraser River Tannery, which we have secured and enlarged.

We will pay highest market prices for calf and light cow hides.

Ship to **LECKIE TANNERY**

New Westminster, B. C.

And notify **J. LECKIE CO., LTD.** Vancouver, B. C.

PRESERVE EGGS IN MAY FOR USE NEXT WINTER

Water Glass Is Second Only to Cold Storage in Effectiveness, Says Poultry Specialist

Eggs should be preserved in May and June for use next winter when they are scarce and high in price.

There are many methods of preserving eggs for winter use such as packing in bran or salt, or covering in lime water, but water glass ranks second only to cold storage, points out Mr. Fox.

Water glass is known chemically as sodium silicate and can be obtained at any drug store. Fresh, thoroughly cooled eggs should be placed in a stone jar or any vessel provided it is not glass, and covered with a 10 per cent. solution of water glass.

The containing vessel should be stored in a cool place, preferably an odorless cellar having a temperature of from 33 to 45 degrees. The vessel should be covered with a board to exclude dirt and trash. The only attention required is that water be added occasionally as evaporation causes the solution to become thick and jelly-like.

Eggs preserved in this manner will be good for use next winter. The preserved eggs do not absorb any undesirable flavors

from the water and are excellent for baking or boiling, but are not so good for frying, as the albumen or white of the egg will absorb water from the solution and become watery. If the eggs are to be boiled the shell should be pierced with a needle to prevent cracking.

Eggs preserved in water glass should not be marketed. The eggs will not have the bloom and fresh appearance of newly laid eggs, but will be smooth and slick.

It has been found that summer eggs do not keep as well as those laid before the hot days. It will make little difference in the keeping of the eggs whether they are fertile or not. Eggs will not spoil if air and heat are excluded.

Copy of Resolution passed by the Okanagan Centre Farmers' Institute at a meeting held March 24, 1917.

"Whereas no conference has been held this year; Be it resolved that every means should be taken during the year to bring before all farmers the vital importance of holding a conference next year, so they may have a fair representation. Also; Be it resolved that a copy of this resolution be sent to every institute asking them to petition their member of parliament to agitate for same."

HOW TO INCREASE HONEY PRODUCTION

Continued from page 21

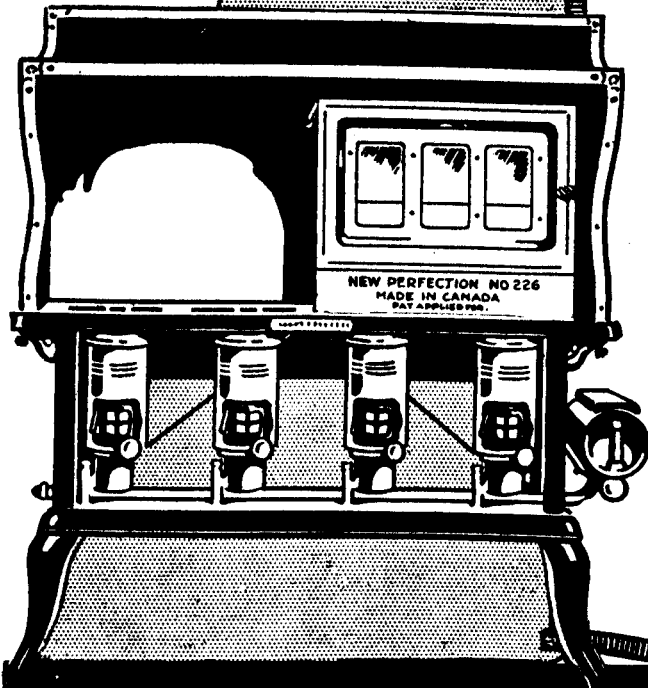
5. Care in marketing. There has been no sensational rise in the price of honey and its good value has recently raised it higher in the public estimation, the unusually large crop produced in Ontario, Quebec and Manitoba in 1916 having sold quickly at prices averaging slightly above those of the previous season. This improved position may be maintained and strengthened by a judicious development of the home market, but will be largely lost if distribution is irregular, especially if the production is small.

Never was there a greater need for an abundant production of Canadian extracted honey!

F. W. L. SLADEN,
Apiculturist,

Dominion Experimental Farms,
Ottawa, May 11, 1917.

The meeting of the Chilliwack Fruit Growers' Association held on Friday evening was slimly attended. Those who were present, however, were well repaid, as the address of Mr. R. S. Clarke, Dominion Fruit Inspector, on the important question of fruit-packing, was of much practical interest to growers and shippers of fruit.



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WOMEN'S SECTION

British Columbia Women's Institutes

Motto—"FOR HOME AND COUNTRY"

COWICHAN WOMEN'S INSTITUTE

Members Enjoy Instructive Lawn Meeting at Quamichan Lake

The lawn meeting of the Cowichan Women's Institute at Mrs. Leather's residence, Quamichan Lake, last Tuesday was a most delectable event. Some fifty-seven members and twenty-five visitors were present. Mr. G. O. Day spoke on nature topics and Mrs. Leather postponed her talk to allow Mr. R. Glendenning to demonstrate the poisonous and non-poisonous varieties of the wild parsnip.

A resolution was passed similar to that of the Duncan Board of Trade, requesting the Dominion government to institute a system of food control. Satisfactory reports were received from committees. The finances are in good shape, membership is now 143 and, therefore, two new directors were appointed, these being Mrs. Holt Wilson and Mrs. W. Paterson.

WOMEN'S INSTITUTE NIGHT AT CRANBROOK

The Women's Institute had charge of the Rex Theatre on the evening of May 8 and succeeded in clearing the neat sum of between \$90 and \$100 from seat sales and the sale of candy and ice cream during the performance. They wish to take this opportunity to thank all those who helped to make it a success and especially Mr. Worthington, who sang between the shows; the Universal Film Company, who donated the films for the evening free of charge; the Cranbrook Band, and all those who gave candy, etc.

The following is a list of the articles received at the shower held at their last meeting in aid of Canadian Soldiers: 9 towels, 4 wash cloths, 3 handkerchiefs, 1 pair pyjamas, 1 comfort bag, 20 pair socks, 7 packages envelopes, 8 writing tablets, 12 candles, 8 tins cocoa, 33 cakes of soap, 17 boxes Oxo, 4 pate de soie, 2 tins deviled beef, 24 packages of soup, 70 packages of gum, 1 lb. Postum, 1 Drinket, 3 packs cards, 37 chocolate bars, 12 packs peppermint, 3 boxes candy, 2 tubes tooth paste, 1 tooth brush, 1 shaving soap, 12 packets Old Chum, 6 packets Bull Durham, 30 boxes cigarettes, 11 plugs tobacco and \$13.75 in cash, which will be spent and added to the list.

HAZELMERE NEWS

Hazelmere Women's Institute realized \$16 out of children's collection of paper and junk. George Thrift and Catherine McConkey winning the prizes for most valuable collections.

The drawing for the Red Cross quilt is postponed till the end of May, when "Doc" Wells, a returned soldier, will give an address and draw the winning ticket.

The officers and members will attend Divine worship in Hazelmere church on Mothers' Day, second Sunday in May.

COBBLE HILL

Great success attended the afternoon entertainment on Saturday, May 12, organized by the members of the Shawnigan and Cobble Hill Women's Institute resident at Cobble Hill in aid of the special Vimy Ridge Red Cross fund. In spite of unsettled weather the attendance was very good, and all came prepared to enjoy the good and varied programme provided for their amusement.

The vocalists included Miss Edith Ravenhill, Miss Phyllis and Miss W. Keene, Miss Doris Lambert, Miss Isabel Watson, and Mr. G. E. Bonner. Mrs. Oldham gave two delightful recitations, and Mr. Stubbs aroused much merriment by his contribution in the character of a vendor of patent medicines. Mrs. C. Nightingale gave a violin solo and Miss Ravenhill held the audience breathless during her reading of a dramatic tale of the war.

Tea was served during the afternoon and a ready sale was found for seedling plants and some tomatoes, most kindly donated for the purpose. A handsome blotter was raffled and a last addition was made to the funds by the raffle of the uneaten refreshments. The secretary of the Red Cross committee was able to close the "At Home" by the pleasing announcement that the receipts totalled \$25 and the expenses amounted to only \$1.75.

To the list of collectors in the Blue Cross Tag Day at Cobble Hill there should have been added last week the name of Mrs. Sloman.

The members of Hazelmere Women's Institute, each wearing a white blossom, commemorated Mothers' Day by attending service at Hazelmere church, Rev. Mr. Bowell preached and was assisted in the service by Rev. H. Matthews, who will occupy the pulpit next Sunday in Mr. Bowell's absence.

UPPER SUMAS NEWS

The Upper Sumas Women's Institute met at the home of Mrs. A. E. Skinner on May 12th. The following ladies were present: Mesdames Cobby, Cox, Bartlett, Fraser, Munroe, Murphy, McMurphy, Porter, Reyburn, Skinner, Tully, Winson, T. F. York. The Red Cross committee reported sending away ten suits of pyjamas, 24 pairs of socks, 12 hot water bottle covers, one quilt, also donation of a pair of socks by Miss Gillespie; also subscriptions of a dollar each from Messrs. Fooks, Campbell and Porter. The Prisoners of War committee reported that Mrs. Hart had sent away \$5 collected in April. This committee organized a most successful "tea" on May 15, when the handsome sum of \$10 was realized. The secretary reported sending away five sacks of waste paper. A letter was read from the superintendent of institutes, announcing that this institute had won first prize for the best average attendance during the previous year. The prize is \$20, and may be expended as the members think fit. It was moved by Mrs. Cobby, seconded by Mrs.

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We prepay the postage.



AT \$1.00—Middy in all white and white with navy or cadet collar, cuffs and pocket.

AT \$1.25—White Middy Blouses, in Norfolk style, with belt, pockets and collar of smart stripes, also plain straight middies made with two pockets in skirt. There are twelve different styles at \$1.25 each.

AT \$1.50—Coat Middy, in all white drill, made with long sleeves, wide sailor collar and button cuffs.

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AGENTS WANTED



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To prove to every woman that this is the best Vacuum Washer made and to introduce it in every home we will send it complete with handle and exhaust protector, which prevents splashing, for only \$1.75 Postpaid.

Washes anything from finest laces to heaviest blankets, without wear or tear—saves rubbing and washboard drudgery. Used equally well for rinsing, blueing or dry cleaning with gasoline. Lasts a life time. Satisfaction guaranteed or money refunded. Send your order to-day.

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Our Literature is done up in attractive pamphlet form and is written by Dr. Torrey Haldeman, Neighbour, C. C. Cook and others like them. It is easy reading, instructive, helpful and low price.

Send for Catalogue.

Tully, that the arranging for this expenditure be laid over until next meeting. The visiting committee reported calls on three stick members.

BURNABY NEWS

The concert held in the Agricultural hall at Central Park on Saturday 19th, under the auspices of the Women's Institute, was a splendid success and nearly fifty dollars was raised for a bed in the military hospital at New Westminster to be one of those in the Burnaby Ward. A sale of home cooking was conducted prior to the concert and a large fruit cake was raffled which went to Mrs. Wm. Wright. Reeve Fraser was in the chair, and among those taking part in the programme were: Miss Beverly Jones, Miss G. Cashel, Madame E. Stewart, Miss J. Pennington, Miss Eileen Gilley, Miss May James and Mr. Walter Baird.

TYNEHEAD NEWS

The monthly meeting of the Women's Institute was held in the public hall here on Wednesday, ten members being present. Mrs. C. Flumerfelt had an interesting paper on "What Women Should Know About Banking," and gave a good deal of useful information on the subject. She also read an instructive article from one of the magazines on "How to Safeguard Our Homes." Refreshments were provided by Mrs. Atcheson and Mrs. McAskill and served by the girls of the News Club. One pair of socks was donated by Mrs. Downing and one dollar collected by Mrs. Davis for yarn was handed in. The younger members of the institute have learned to knit, and all of their knitting was very nicely done. It was proposed to form a Conservative Association of women, but it was laid over to another meeting.

Department of Agriculture,
Victoria, B. C., 5th May, 1917.
To Secretaries of Women's Institutes,

TO MAKE VINEGAR No Need for Farmer's Wife to Buy.

There is no need for the farmer's wife to buy vinegar when she can make it so easily and in much better quality at home. Vinegar may be made from various fruits and cereals, such as grapes, apples, pears, prunes, peaches, raspberries, apricots or crabapples, also corn or navy beans, all make good vinegar. While apple and crab-apple vinegar are considered the best standard vinegars, they are not to be compared for flavor with peach vinegar, which is best of all to an epicurean. Prune vinegar is fairly good, but better if mixed with apple or peach.

Take a 50-gallon hogshead and put into it three gallons of pure water (pure rain-water, filtered if possible, and not from a cedar roof); fill the barrel to within eight inches of the top with fruit juice; put in one pound of raisins and a pinch of yeast (not quite half a cake). If the juice be pear or prune add two pounds of brown sugar or white beet sugar will do. The barrel must, of course, be headed. Set in a warm room, with bung-hole up. Leave bung-hole open, but tack a wire screen over it.

As soon as the vinegar has ceased working, place the barrel in a clean cellar, with bung lightly corked, so that any gas will be able to escape. It should set a year before being sold, as it does not acquire the

desired quota of acid until thoroughly ripened, and the inspector often destroys good vinegar simply because in his ignorance he does not know how to distinguish the unripe article from that adulterated with water. If you are out of vinegar and far from market the bean vinegar is quickest made. Take a two-gallon glass jar; fill nearly full of water and sweeten it quite sweet with brown sugar. Wash a large teacupful of navy beans and put into the sweetened water, and set in a warm room where the sun will strike it most of the day. In a week you can strain and use. Cornmeal vinegar is made the same way; instead of the beans add to the sweetened water two cups of cornmeal. Apple, crab-apple, pear and peach vinegar are good for all purposes. Raspberry vinegar makes a good summer drink, especially combined with unfermented pineapple or orange juice, and sweetened ice water. Cherry vinegar, like peach vinegar, is fine for making sweetened salad dressing for fruit and nut salads. The bean and corn vinegar are also good for general use, and, being perfectly clear, are preferred by some for such salads as cucumber or artichoke.

Vinegar is usually made from raw juice, but when one has no press and wishes to make a small quantity the apple and peach parings may be cooked in a minimum of water and put through a jelly bag, then a little sugar, raisins and yeast added in proper proportions. I have made a pint at a time, and set it away to ripen in a fruit jar, and have helped my father make hundreds of gallons.

ANTS IN THE HOUSE

Sometimes ants are troublesome in the house, especially in the kitchen. A sponge with sweetened water, leave it where the ants are for a few minutes. They will crawl into it. Then drop it into boiling water to kill the ants and repeat. Another method is to grease a plate with lard. The ants will crawl onto it and get stuck. Kill them by dipping the plate into hot water.

COTTAGE CHEESE

An Inexpensive Meat Substitute

Cottage cheese is one of the important meat substitutes, say specialists of the United States department of agriculture. It contains a larger percentage of protein (the chief material for body building) than most meats and furnishes this material at a lower cost. In every pound of cottage cheese there is about one-fifth of a pound of protein, nearly all of which is digesti-

ble. Meats, on the other hand, usually contain less protein and, besides, have a certain waste, such as bone and other inedible material. A pound of cottage cheese daily would supply all the protein required by the ordinary adult engaged in a sedentary occupation.

TO RENEW WINDOW BLINDS

A splendid way to renew old window blinds is to put them on a table or flat surface, wipe all dust from them, and with a paint-brush and a can of paint you can make them look like new, no matter how soiled they are. Paint one side at a time, and when it is dry, turn and paint the other side.

TO CLEAN VELVET

Stretch the velvet tightly, pile side up, over a basin of boiling water. Get some one to brush up the pile briskly with a stiff whisk, as the steam rises through it. If the material is really soiled and not merely crushed and flattened, sponge it lightly with gasolene, taking care that there is no artificial light or fire in the room.

MAKING TOWELS LAST

When kitchen towels become thin, lay two of the same size together, one on top of the other, and stitch around the edges on the machine; also diagonally across the middle. The double towel will last for a long time.

DATE GEMS

Cream $\frac{1}{2}$ cupful of butter with $1\frac{1}{2}$ cupsful of sugar, add 2 well-beaten eggs, beat well and add 1 cupful of sour milk or cream, 2 cupsful of flour sifted, with 1 teaspoonful of baking soda, 1 cupful of chopped dates and 1 teaspoonful of orange extract. Divide into well-buttered gem pans and bake in a quick oven.

BAKED SYRUP PUDDING

Two tablespoonsful of golden syrup, 1 cupful of bread-crumbs, 2 cupsful of milk, 1 teaspoonful of butter, 1 tablespoonful of chopped orange-peel, 3 tablespoonsful of raspberry jam and 2 eggs. Put the crumbs into a basin, add the peel cut into small pieces. Boil the milk, pour it over the crumbs, stir in the golden syrup, butter, the yolks of eggs, one by one, stirring each well. Beat the whites up stiffly and stir them in. Spread the jam over the bottom of a pudding dish. Pour in mixture and bake in a slow oven for 30 minutes. Serve with hot milk.

Canadian Northern Railway



TRANSCONTINENTAL

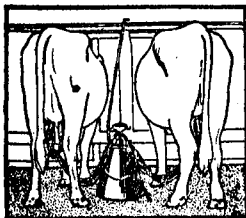


LEAVE VANCOUVER

9:00 A.M. SUNDAY.....WEDNESDAY.....FRIDAY, 9:00 A.M.
SCENIC ROUTE BETWEEN VANCOUVER AND TORONTO. SHORT LINE TO
EDMONTON AND PRAIRIE POINTS. NEW AND MODERN EQUIPMENT. ELECTRIC
LIGHTED STANDARD AND TOURIST SLEEPING, DINING AND COMPART-
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DAILY LOCAL SERVICE

7:00 p.m. Leave.....VANCOUVER.....Arrive a.m. 11:00
9:45 p.m. Arrive.....Chilliwack.....Arrive a.m. 8:15
11:00 p.m. Arrive.....Hope.....Leave a.m. 7:00
Full particulars may be obtained from any Canadian Northern Agent.
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"With your Milking Machine I can Produce Milk of Superior Quality"

The writer of the letter below is known throughout his district as a keen and rather critical judge of dairying methods and equipment. They say he is a "crank" on quality!

Certainly the John D. Duncan Co., of Montreal, are most particular about the purity of the milk they get for their patrons.

RIVERFIELD, QUE., Jan. 25, 1917

Gentlemen:—

I have noticed some of the testimonials you are publishing and thought I would let you know how I like the Empire Milking Machine and Empire Engine which I purchased from you in the month of April, 1916. It has given entire satisfaction. I have had considerable experience with engines for many years, and am consequently in position to appreciate the merits of the Empire, and recommend same as one of the most reliable for milking machine and general farm work.

With your Milking Machine I can produce milk of superior quality, according to the statement of the John D. Duncan Co., to whom I have been shipping. I find that the machine is in no way injurious to the cows or teats, and no other trouble has been experienced. The speed at which the machine can milk is regulated by the class of cows and the quickness of the operator.

J. R. MCKELL.

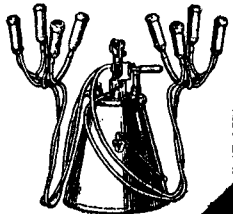
EMPIRE Mechanical Milkers

produce milk of high quality, at the same time that they save time, reduce expense, increase profits, and make it possible to keep up and even increase the number of cows milked, in spite of the growing scarcity of help. They certainly are worth investigation.

Write for Booklets explaining the correct natural principle on which the Empire works, and giving the experience of prominent Dairymen who are using it. Address Dept. 4.

THE EMPIRE CREAM SEPARATOR CO. of Canada, Limited.

C. L. MERRITT, B. C. Distributor. Dominion Bldg., Vancouver, B. C.



PLAN FOR THE ASSISTANCE AND ENCOURAGEMENT OF URBAN POULTRY KEEPERS

The present year will see a great increase in the number of urban poultry keepers. The almost prohibitive prices of eggs and poultry during the past winter have caused many consumers to seriously consider the home production of these very necessary and useful commodities. It is important also that any efforts put forth in this direction result satisfactorily.

Many difficulties present themselves in attempting to rear chickens successfully on a small city lot. Experience has shown that the best way for urban poultry keepers to enter the poultry business is by the purchase of pullets in the fall. Well-matured pullets are the most reliable winter egg producers and if well cared for will not only produce plenty of fresh eggs for the breakfast table but also return a reasonable profit on the expenditure entailed.

Plan Proposed.

Ordinarily, well matured pullets are rather scarce and difficult to obtain in the fall of the year. It is believed, however, if the matter were taken up systematically by poultry associations that the difficulty could be overcome, and, incidentally, serve as a means of increasing interest in the poultry industry. Practically every large town and city has its local poultry association. It is suggested that each association give some publicity to the suitability of thrifty, well matured pullets for profitable winter egg production and advertise the fact that the association is prepared to constitute itself a medium to arrange for

the hatching and rearing of pullets this spring and for their delivery in the fall. It could be announced that orders would be taken during the month of April and the first part of May. All those desiring pullets in this way could be required to join the association and make a small deposit covering the number required.

The association could then make such arrangements as might be necessary with nearby co-operative associations, farmers and breeders for the growing of the pullets, a minimum price to be decided upon for the different breeds and varieties. In the fall these could be assembled at some central depot in each locality and the distribution made in time to permit of the proper housing of the stock in permanent winter quarters before the severe weather set in, say by the last of October.

Federal Assistance.

In order that greater effectiveness may be given to this proposal, the Dominion Live Stock Branch is prepared to extend to all associations qualifying under these provisions the same assistance that is given to associations desiring to purchase other kinds of pure-bred livestock, namely, the payment of reasonable travelling expenses, during the time required to conclude the purchase and transport the stock to destination, of representatives of associations, in any section of Canada, desiring to purchase pullets in lots of 300 or more. Should it be desired, the live stock commissioner will also nominate a suitable person who will be directed to accompany this representative and assist him as far as possible in the selection and shipping of the pullets.

In the general interests of the poultry industry throughout the Dominion and the

The ESQUIMALT & NANAIMO RAILWAY CO.

Vancouver Island, B.C.

The Company has in its Land Grant many thousands of acres of excellent land eminently suited for Fruit growing and Mixed Farming.

A beautiful, healthy climate—fine soil, and a great and rapidly increasing demand for butter, milk and cream (fine creameries in each district)—a cash market for poultry and eggs, large profits from mixed farming and vegetable products.

A complete modern educational system—free, undenominational—primary and high schools on the beautiful Island of Vancouver.

Descriptive pamphlets and full information on application to

L. H. SOLLY

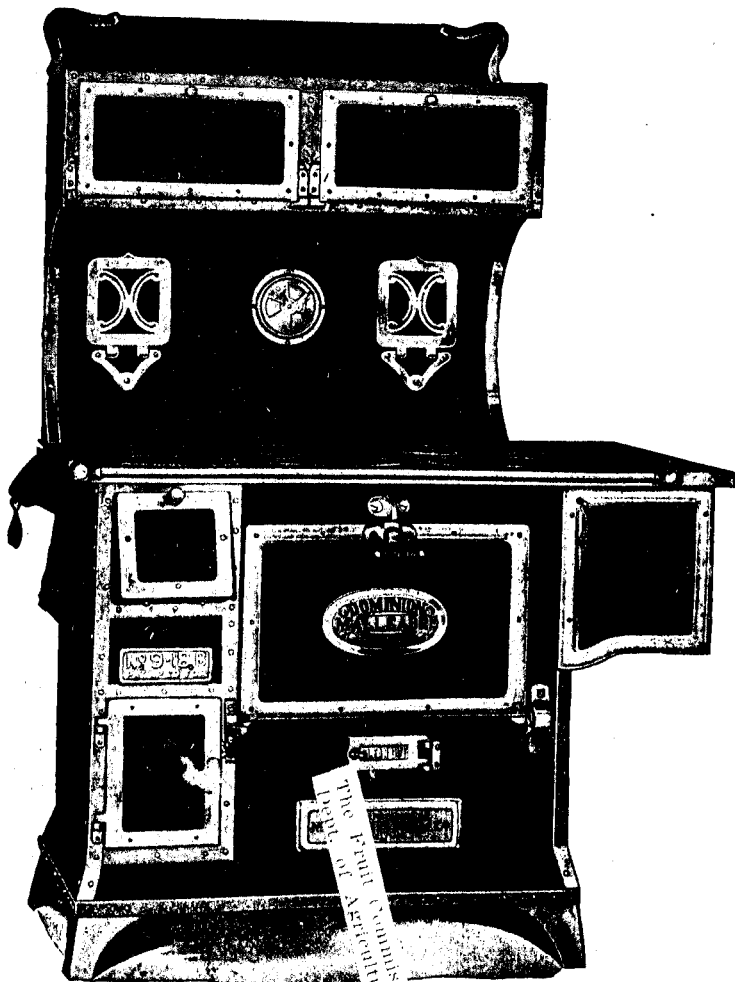
Land Agent, E. & N. Ry.

VICTORIA, B. C.

urgent need this year for increased production of eggs and poultry and the releasing thereby of a large surplus for export to Great Britain, it is hoped that as many associations as possible will take advantage of this proposition. All associations desiring to become active in this direction are requested to write the live stock commissioner, Ottawa, at once for further advice and instruction in the matter.

BEEKEEPERS MEET

Appreciation of the help given by the manager of the exhibition and the board towards the erection of the experimental apiary to be set up in the exhibition grounds was expressed by the committee of the Beekeepers' Association. The committee appointed to make awards in connection with the competitive display of honey at the exhibition have decided to make no change in the score system already adopted, and the judges were left to decide for themselves whether judging should be made by standard of comparison or not. A donation of \$10 was set aside towards the prize list of the Surrey annual fair.



This Canadian Range

Regular \$65 Value,
to Sell to Fruit and
Farm Readers for

\$49.⁵⁰

—Just like the illustration—with a full malleable top, fitted with six 9-inch cooking holes, pouch feed and large oven, complete with high warming closet and large copper reservoir—the most notable range value in Canada; designed on lines to make cooking easy and a pleasure, and to give forth the greatest amount of heat for the smallest quantity of fuel.

Sent, prepaid, to your nearest depot for \$49.50



Overalls for Men

THE BEST EVER—\$1.50 AND \$1.75

—the guaranteed “no-rip” kind, made of the heaviest quality denims, in blue or black, and fitted with the usual number of pockets. Buy them today for less than wholesale prices, at **\$1.50 and \$1.75**



SPECIAL VALUES IN BOYS' SUITS

\$6.45

A special offering to out-of-town shoppers—the finest suit to be bought in Canada at this price. Made of a nice brown tweed, or a plain grey, with stitched on belt and pleats.

A suit built for service—in sizes 25 to 34, and a bargain unequalled ... **\$6.45**

MEN'S SUITS

Made by Canadian custom tailors, with every care given to ensure you a perfect fit, as you would get were you in the store making the selection yourself. Thousands of suits to select from, and every one tailored perfectly to the finest detail.

Plain Grey Suits at \$17.50, \$20.00, \$22.50 to \$27.50
Blue Serge Suits at \$22.50, \$25.00, \$27.50 to \$37.50
Fancy Tweed and Worsted Suits, from \$15.00 to \$40.00

WHEN ORDERING give correct chest, sleeve, waist and leg measurements.

THREE SPECIAL VALUES IN SUMMER WASH SKIRTS

All up-to-date styles, made of good washing serviceable materials, and fashioned to fit and to look well. The low prices place them within everybody's reach.

WHITE WASH SKIRTS

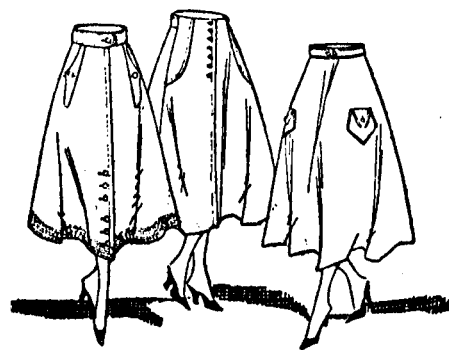
Made of fine quality repp, cut plain and full, open in front, three-button fastening and patch pockets. All sizes. Exceptional value at **98c**

WHITE WIDE CORDUROY STRIPE SKIRT

With pretty hip pocket, opening in front and fastening with three large pearl buttons; all sizes. A smart skirt and only **\$1.50**

HEAVY BENGALINE PIQUE WHITE WASH SKIRT

Open down front, with large pearl buttons, has two pockets; all sizes. Special value **\$1.75**



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