

BRITISH COLUMBIA
FRUIT AND FARM
MAGAZINE

Vol. VII., No. 14

NOVEMBER, 1915



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BRITISH COLUMBIA Fruit and Farm Magazine

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

Vol. VII.—No. 14

Vancouver, British Columbia

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in Advance

B. C. Fruit and Farm Jottings

Summed up by a statistician of Penticton, fruit shipment from that place for the city amount to 195 cars and for the most part the crop was grown on the orchard area in the municipality of Penticton and probably one thousand acres of orchards at Kaleden. This means that this crop was taken from less than 5,000 acres of orchard, not a tree of which is more than ten years old, the majority of them not more than seven years old, and quite a number very much younger. The 1914 figures, exclusive of canning business, amounted to 102 cars.

F. C. Just, Canadian Trade Commissioner, recently returned from an extensive tour through Russia, sees a good opportunity for opening up a trade from British Columbia in apples and pears with Vladivostok importing houses. Substantial reductions in through rates on merchandise shipped from American-Pacific points via Vladivostok to interior points in Russia encourage the idea of closer trade relations between British Columbia and Russia.

That dry farming can be carried out with undoubted success is shown by the accomplishments at Quilchena by Mr. Bloodland at the Quilchena Experimental Farm. Twenty acres under cultivation produced as follows: Two load chevalier barley yielded 76 bushels to the acre; white hulless barley yielded 70 bushels to the acre; men-suary barley yielded 84 bushels to the acre; Red Fyfe wheat yielded 49 bushels to the acre; oats yielded 91 bushels to the acre, a total yield of 27 tons, 4 cwt. 42 lbs.

Two cars of Summerland apples, one a straight car of Grieve's Golden, and the other made up of Grieve's Golden and Winter Banana, were shipped recently to Buenos Aires, South America. Four cars were also shipped for the same port from Kelowna.

At a meeting of the Okanagan United Growers recently, Manager Jackson stated that the shipments for the year up to October 13, amounted to 923 cars. Orders are still unfilled for fruit and vegetables which will be moved out before the end of the season, amounting to 397 cars, which will give a total of 1220 cars. Other shipments not as yet sold will, it is estimated bring the grand total of the business of 1915 up to 1380 cars. This makes the apple tonnage for the year handled by the United Growers to work out approximately to 347,280 boxes. In addition to this the organization may have on hand at the end of the year a considerable quantity that may be held in storage over the winter months. Up to date the export shipments include

1,910 boxes of apples to South African and 20,323 to New Zealand and Australia. Additional shipments to these places will go forward by November boats.

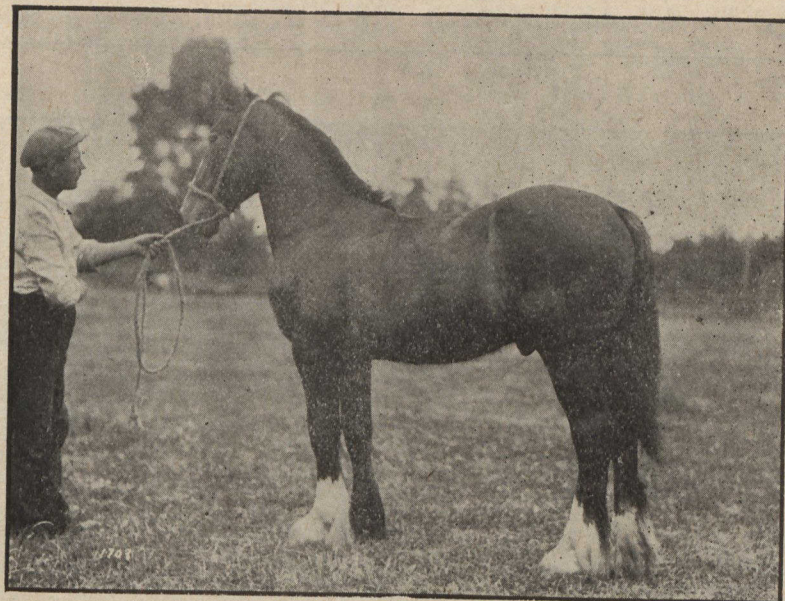
E. L. Ward, writing in the Vernon News, says: If you wish to be a successful dairyman you must always treat your cows very carefully and not rush them with dogs. A milkman who sings to his cows always has a larger flow of milk than a man who shouts and upsets the temper of his cows which interferes with the proper digestion of their food.

The opening sentence of Circular Bulletin, No. 13, of the Live Stock Branch of the Department of Agriculture, for which Wm. Newton, provincial Soil and Crop Instructor, stands sponsor, sufficiently explains the object sought to be attained. It points out that British Columbia at the present time is dependent upon outside sources for root-seed and urges the undesirability and un-wisdom of this, seeing that indications suggest that there are numerous districts in the province where root-seed production promises to become a profitable agricultural industry. The Circular then proceeds to speak of the necessities of the produc-

1,000 to 3,000 lb. per acre; carrot, 3 to 6c per lb., yield, 800 to 2,000 lb. per acre. Study of culture conditions is, of course, a necessity, and then, the Circular declares, under favorable conditions, root seed production will prove profitable.

Discussing vacant lot gardening in British Columbia, Herbert Cuthbert, industrial and publicity commissioner of Victoria, says: After carefully considering the whole matter, I believe that it is a most excellent movement, but more particularly for the small householder with a family, who has not very much work, because he can raise all the vegetables he needs for a year, will have a little to sell, and will thus be able to help out in keeping his family in a practical and beneficial way. To the individual who is unemployed I do not think it is very much use, because he does not know whether he will be able to continue his work or not, nor does he know whether he will be in the same city or not when his crops mature.

Taking last year and this year together 359 teachers (137 male and 222 female) have taken the course in Rural Science, in the British Columbia summer courses in



"TANDRIDGE RAMBLER," Sold at recent sale of Pedigreed Stock at the Colony Farm.

tion, how it can best be cultivated, stored and disposed of. The cost of growing root seed in the United States is quoted as follows: Turnip 1½ to 3c per lb., yield, 1,000 to 4,000 per acre; beet, 2 to 4c per lb., yield,

agriculture, at Victoria, and of these 77 (34 male and 43 female) have completed their second year. Coming as they do from both urban and rural schools and from all

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Rural Education in Canada.

"He who would teach others must himself be well informed."

The truth of this has at last been grasped and during the past year a series of "Summer Schools for Teachers" has been held at leading educational institutions in Canada. Agriculture has been one of the subjects dealt with and it is greatly to the credit of those engaged in the instruction of youth to know that the classes in agriculture have been well attended by the teachers throughout the Dominion.

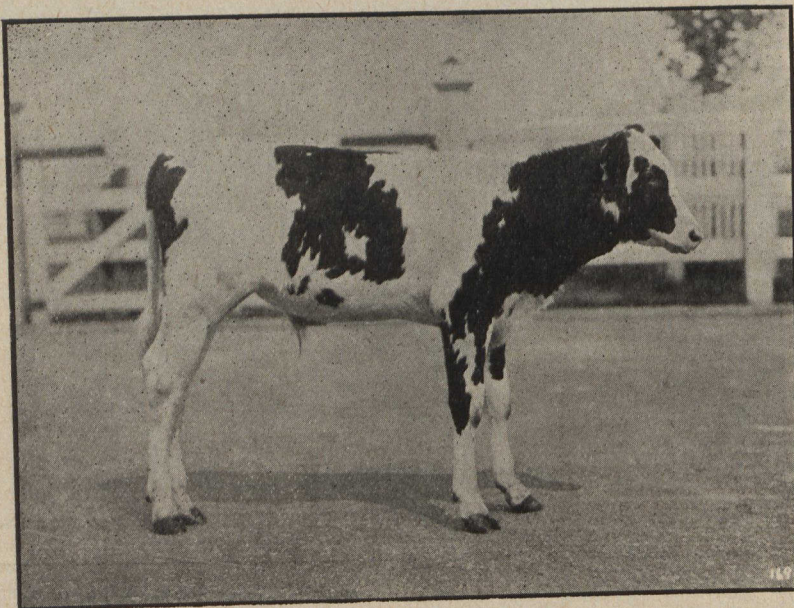
From the very inception of these summer schools the teachers seem to have grasped the added importance given by the war and to have risen to their opportunities. In every province there was a good attendance but nowhere was so much interest displayed as in British Columbia. In New Brunswick the attendance was 179. Ontario had 231 students; in other centres the number was round about 150. In Alberta the attendance was 310, but in British Columbia it was 690.

The main subjects taken up were common to all so that the large attendance in British Columbia did not result from special attractions. Rural and household science, gardening in all its phases, farm mechanics, plant and animal life, nature study and household arts, these were the subject taught to teachers who will thus be equipped for passing on knowledge to the pupils in a lucid and attractive way. Lessons will not be given in the "slipshod" manner which comes from lack of information.

The large attendance from this province is most significant. It shows that British Columbia has due regard for the importance of agriculture and holds promise that British Columbia is in line for a development that will astonish the rest of the Dominion. Hitherto British Columbia has not been noted for its agricultural pursuits nor

are its wonderful resources in this regard as widely known or appreciated as they should be. The history of most new countries has invariably been associated with farming but such has not been the case in this province. Our wonderful lumbering, mining and fishing wealth has till now overshadowed our agricultural richness. The rapid growth of the prairies has also tended to detract from British Columbia agricultural development. Now, however, that the province and the rest of the Dominion has had time for investigation a more correct appreciation of our resources forces itself to the fore and it is only a matter of time and opportunity until advancement will be rapidly made in this direction. The fact that of all the provinces British Columbia has the largest attendance at the "Summer Schools for Teachers" would indicate that we are beginning to appreciate the importance of our agricultural resources.

In Alberta it is interesting to note that "folk dancing" was added to the curriculum of the summer schools. It seems a far cry from lessons in agricultural to lessons in "folk dancing" and yet the addition of this pleasurable study is not without its merits. Time was, as Goldsmith has reminded us, when in certain rural districts now altogether unproductive, "every nook of ground maintained its man." That was in the old days when there were holidays, when the village green was gay on May Day and "The Harvest Home" was an institution. Then "folk dances" were in vogue and people took a hint from the adage "all work and no play makes Jack a dull boy." Jack now has his play, baseball, football, and cricket, but agriculture and all forms of labor will improve and not deteriorate if Jack is taught how to play as well as how to work and that is why we think that Alberta in teaching "the poetry of motion" as an adjunct to



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agricultural training has engaged in an experiment from which happy results may be expected.

In connection with agricultural education in British Columbia it is encouraging to note that due recognition has been given a great study by the University of British Columbia, recently starting classes, in the establishment of a Department of Agriculture under the direction of a capable leader in Professor Leonard S. Klinck, M.S.A. A course in the arts department in "The Scientific Basis of Agriculture" has been set that is designed to familiarise the students with the basic principles underlying scientific agriculture. Three lectures per week are given on this during the fall term. We predict that the establishment of this branch of study at the university will have far reaching effects on the agriculture development of the province and hope at a date not far distant to give our readers more information on the aims of the department and forecast some of its beneficial effects to British Columbia.

FARMERS AND CO-OPERATION.

Most People Agreed on Its Desirability but Fail to Take Advantage of the Opportunities Presented.

Much is heard in farming communities of co-operation. The subject is a favorite topic with writers on agricultural matters and co-operation is a word that comes readily to the tongue of every orator that mounts a rural platform.

Co-operation, like many another principle, is something that we all realize is a good thing and then straightway show how interested we are in bettering our condition by showing a complete indifference to anything that tends to bring the desirable condition. It is something like the man who is ruining his health with excessive drinking. He admits everything you say on the matter and goes out and drinks just as hard as ever.

Every farmer admits that co-operation is the one thing that will give him a fair show in his own community and in the market, and yet when something comes along in which he can co-operate to the mutual advantage of his neighbor and himself he fails to take advantage of the situation.

Collectivism while a Socialist doctrine is not the exclusive property of the Socialists. It is older than Socialism and properly applied a boon to those who have tried individual methods without success.

Co-operation as applied to marketing is everything. In this connection some remarks from the Fraser Valley correspondent of The Vancouver World tell a tale of apathy that we imagine is not confined to the Fraser Valley alone in British Columbia. He says:

"Many plans were formulated to assist the farmer in the matter of co-operation and successful marketing, but for some reason or other all these schemes have fallen by the way side. Even the Fraser Valley Development League in which many municipalities were interested and which for a while appeared to be going along in fine shape has dwindled to practically nothing but a matter of history with a law suit for salary about the only live thing to remember it by.

Hard to Organize.

"Farmers' Institutes are not attended as regularly as they should be and it appears to be a hard proposition to organize the farmers of the Fraser Valley and to convince them that with one of the most fertile valleys on the Pacific Coast, excellent transportation facilities, fine weather and large markets right at their very door, there should be no such thing as inability to pay taxes, hired help and running expenses, besides making additional improvements on the farm. By co-operation and successful marketing the farmer would no longer be under the thumb of a few men in the city. He would get a fair return for his labor, would have sufficient money to pay his taxes and therefore assist the municipality in securing funds with which to construct better roads in and around his place. The consumer also would benefit and the fertile Fraser Valley would then come into its own for, with the soil, the vast acreage, fine climate and excellent transportation facilities, the Fraser Valley should be able to supply all of British Columbia and a large part of the prairie provinces at a fair profit to the farmer and a great saving to the consumer. Co-operation, however, is at present lacking in the valley and until this

is brought about, in the opinion of those who have studied the question, conditions will not improve, regardless of extra good crops."

RECORD CROPS NOW BEING HARVESTED.

In a letter to the Fraser Valley Development League on his return from a trip through the Thompson and Okanagan valleys, Deputy Minister of Agriculture, Wm. E. Scott, writes that he everywhere in these regions found that the farmers were harvesting record crops. Since apples are now selling at a satisfactory price, he believed that those having bearing orchards in the fruit valleys of the interior should get good results.

As for vegetables, he finds the condition far from satisfactory. There are thousands of tons of potatoes in the province this year, and no market for them. The export trade, he says, appears to be absolutely shut off. A certain number have been sent to Australia, but the freight space for shipments to this market is limited, yet the deputy minister believes that in a month or two potatoes will recover in price. He has been informed that the prairie crop is rather badly frosted and that it will be necessary to ship them to the market without delay if they are to keep any length of time. If this is the case it would mean, he says, that there will be a market in the prairie provinces to a certain extent later in the year. As for the grain crops in the interior, he found these excellent. At a conservative estimate, he places the crop of grain in this province as double that of last year.

But while farmers have had excellent returns taking it all around, the old problem of successfully marketing their produce at a price which will give them a fair return for the labor and energy they have expended in growing their crops is still to the fore. Mr. Scott believes that here is where proper effective co-operation comes in, and says that if only the producers can be got together along good business-like co-operative lines and the element of distrust overcome they would be better off.

BOOKLETS TELL OF DISEASES OF ANIMALS.

Two bulletins of premier importance have recently been issued from the health of animals branch of the Federal Department of Agriculture at Ottawa, of which Dr. Torrance is the veterinary director-general. Both can be had free on application to the publications branch of the department.

The first, No. 17, is entitled "Enterohepatitis or Blackhead in Turkeys." Charles H. Higgins, B.S., D.V.S., of the biological laboratory, is the author. While the disease has been known to affect all species of fowl. It is usually seen in its most aggravated and fatal form in turkeys. Dr. Theobald Smith of the United States Department of Agriculture made an investigation in Rhode Island during 1894 and 1895, but it was not until 1900 that the first mention was made of it in the experimental farms report of Canada. It has since, however, been repeatedly reported upon in the biological laboratories both at Ottawa and Guelph. Dr. Higgins says that the losses from the disease have been enormous, which supplies excellent reason for a close study of the bulletin. "The extent of these losses," he further says, "is

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The work has the hearty endorsement of every Horticulturist and College in the West. The Heads of the Agricultural Department of this Province who have studied the work are unanimous in their suggestion that it should have a prominent place in every home.

A letter from Mr. Cunningham, Provincial Fruit Inspector, says in part: "I have in my library the leading works on Horticulture, but none are so practical or well adapted to B. C. conditions as this publication, and I can conscientiously recommend to all interested in the products of the land as being thoroughly up-to-date and an invaluable assistance to success."

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BRITISH COLUMBIA FRUIT and FARM MAGAZINE

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Vol. VII. NOVEMBER No. 14.

One Result of the War.

In war times things quickly find their level; the superficial is cast aside and the thoughts of nations and individuals turn to the things really worth while.

Great Britain had not been at war longer than a month when every incipient real estate boom, oil stock gamble, and every other artificial stimulus of prosperity was broken flatter than a pancake. In its place was the talk of production; how much can the country produce? and how high will foodstuffs mount in price?

War, more than anything else, brings home to a nation the realization that the cultivation of the soil is the most important pursuit of the nation.

The war has brought to an abrupt halt the ordinary activities of a great many people who will be forced to take up other occupations. Many of them will turn their attention to agriculture. They are doing it now. This is evidenced in our own province, where in parts adjacent to Vancouver a great many people are taking up small holdings. Of course they will not all succeed but many will, and the others will gain experience that will mean a measure of success later. The agitation for the cultivation of the city vacant lots is proceeding and while it is on a small scale many are thus receiving their first introduction to agriculture. The unemployed situation is acute and relief is being proposed along the lines of getting the people back on the land.

The trek has been toward the cities during the past decade and our urban population has grown out of proportion to our rural settlement. From now on and following the war we venture the prediction that there will be a great rush to the land throughout Canada. Canada will be the gainer; and more stable prosperity will be established, and many thousands will lead more contented lives.

AFFECT EVERYONE.

Farmers are more interested than at first would appear to be the case in the agitation being carried on by the Board of Trade of Vancouver, Victoria and New Westminster for the appointment of a Canadian customs inspector at the port of New York. With such an appointment goods from Eastern Canada could be sent in bond to the Pacific coast by way of the Panama Canal without payment of duties at New York. This means that Eastern merchandise could be landed at Vancouver for distribution through the province at a very

greatly reduced rate from what is now paid in freight for the transcontinental railway haul.

Naturally such a condition is conducive to cheaper merchandise. But apart from this there is the tremendous advantage to the province of securing bottoms for shipping out the products of the province. The lack of bottoms is one of the things that is holding back industrial British Columbia and consequently retarding the whole prosperity of the province.

The government, of course, is loath to make the New York appointment which would appear to build up foreign transportation lines at the expense of Canadian railways, although this is debatable for the railways would benefit by the increased business in the railway hands east and west—to the supplying point and the distribution centre. Sir Robert Borden, however, has promised the Pacific Coast request a fair consideration and the movers in the present agitation are hopeful of a favorable answer. In the meantime the agitation has apparently not been without results, for at present writing representatives of Canadian railways are on the coast interviewing importers to see if the wishes of the latter as regards cheaper freight rates cannot be met. A cheaper railway rate would not be as advantageous as far as British Columbia is concerned, as the privilege of shipping by way of the Panama, but it would be a better concession than nothing and a vast improvement over what has been.

THE CODLING MOTH.

Of vital importance to the fruit growers of British Columbia is the fight being put up to keep the codling moth from getting into British Columbia orchards by the agency of Washington fruit. Many carloads of fruit from Washington have been condemned on arrival in the province owing to the presence of this pest.

In this connection the provincial fruit inspectors have been doing good work and are deserving of the hearty support of everyone who wishes to see B. C. orchards kept clear of this destroying pest. British Columbia fruit growers should see to it that the codling moth does not enter their own orchards and they will serve not only the general public but their own best interests if they will report at once anything of a suspicious nature to the authorities. As it is it will be a difficult matter to keep the province clear and if it is it will be only by hearty co-operation on the part of the growers.

In Eastern Washington the damage done to the apple crop is compared to the ravage of the Kansas grasshopper. It is said that one cannot possibly realize the extent of the loss caused by these worms without actually seeing it. According to a Seattle despatch the shrinkage has been enormous, and not fifty per cent. of last year's fancy and extra fancy crop will be shipped. There is a cash buyer for almost every orchard and prices are very firm. The infected apples, packed in half-barrel crates, are being sold in the middle west at 75 cents per crate, f.o.b. shipping point.

MONEY IN SUNFLOWERS.

The raising of sunflowers by the farmers of Kamloops district has been seriously considered by the Board of Trade of that city. The Kamloops Standard has also investigated the subject and presents the following, which is thoroughly reliable as the communication is from the United States Department of Agriculture:

The sunflower, known botanically as *Helianthus annuus*, is an annual plant, native of North America, now cultivated as an agricultural seed crop chiefly in India, California and Missouri. The seeds are fed to farm animals and poultry for fattening purposes and also for their condimental and medicinal properties. By cold pressure the seeds yield 15 to 20 per cent. of edible oil of fine quality, and by hot pressure a larger quantity of poorer quality, useful in soap-making, wool dressing, in paints and in certain kinds of varnish. The oil of sunflower seeds is not produced commercially in the United States.

The sunflower does well in almost any soil suitable for growing corn. The seeds are planted about 2 inches deep, very early in the spring, in rows 3 feet apart. The seeds may be dropped by hand or planted with a drill, 2 or three inches apart. When the plants are 8 to 10 inches high, they should be thinned to stand about 18 inches apart in the row. If planted in hills or checks, 3 by 3 feet, two good plants may be allowed to each hill. From 4 to 8 pounds of seed are required per acre, if planted in hills, or 10 to 15 pounds if planted in drills. Sunflowers are cultivated practically the same as corn. For seed production the single head varieties are recommended. The Mammoth Russian is considered best, especially for the production of oil.

Sunflowers are harvested when the heads are fully ripe, usually about the middle of September. The method of harvesting varies according to season and circumstances. Usually a wagon driven alongside the rows, the heads are cut off with a large sharp knife, thrown into the wagon box, and against the sideboard whereby a large part of the seed is shelled out. A workman in the wagon uses a stout stick or a curry comb to remove any seed remaining in the head, which is then thrown upon the ground. In this manner three men usually harvest at least an acre a day. The seed is cleaned on a fanning mill, spread out on a floor and turned at intervals until thoroughly dry, since new seed tends to become musty if closely stored in large quantities.

According to the latest census figures the average yield per acre of sunflower seed in the United States was 13.3 bushels. Yields of as much as 100 bushels per acre have been obtained, and it is probable that from 30 to 50 bushels per acre may be expected under good conditions. The bushel weight is quite variable, but the weight of seed per acre usually ranges from 100 to 1500 pounds. The average price received by growers for several years past was approximately 2 cents per pound.

W. W. STOCKBERGER,
Physiologist in Charge of Drug and Poisonous Plant Investigations.

POTATO MARKET NOT ENCOURAGING. Crops Are Good but Market Is Poor— Future Does Not Hold Much Promise for Betterment.

A good market is just as important to the farmer as a good crop. Neither one is of any use without the other. This is very strikingly illustrated these times in the present condition of the potato market.

Much has been printed in the newspapers about the enormous potato crop throughout British Columbia this year. There has been a splendid crop in many parts of the country but it is doubtful if the yield has been quite as large as generally credited although there is no question but that it is bigger than last year.

The market for potatoes, however, is far from satisfactory and at present writing, October 22, cannot be said to be particularly encouraging although there are signs that in this respect an improvement may be effected. Up to the present prices have barely netted the farmer the cost of sacking and shipping. An instance of just what condition the market is in is seen in one sale made on the basis of 27 cents a sack delivered in Vancouver. This was an order for a car load. At this rate the big crop has not been of very much benefit to the farmer.

Outlook Not Bright.

The outlook at present for the immediate future is not bright but developments during the past few days bring to light a possible eastern demand which may be successfully met by British Columbia produce and which, if of any great extent, will eventually be highly beneficial to those with a big crop on hand.

Another thing that will not be without its effect on the provincial market is the establishment of the new evaporating plants together with the establishment of a plant in the buildings of the old Western Cannery of Kelowna and renewed activity in the plant at Ladner. With these plants working full blast the market is bound to be strengthened considerably. They will consume large quantities of potatoes and save many farmers from severe losses. Prices though created by these industries will be far from record-breaking.

The Export Demand.

The export demand is fair, but lack of bottoms prevents the market from catering to any other than Australian demands. These orders from Australia, although rather frequent, are too irregular to do more than relieve a noticeable glut. A recent shipment to Australia of onions and potatoes only absorbed 265 tons, so that it can readily be seen this at best is but a meagre outlet.

For some time it has been mooted that a big shipment of potatoes—a ship load—is likely to go to South America to Buenos Aires. This rumor refers to the advice received by the Vancouver Board of Trade from an agent they recently sent to South America in the interests of British Columbia trade. The order was bona fide enough but the difficulty has been to secure a ship in which to deliver the consignment. "Fruit and Farm" has heard that a B. C. syndicate has been endeavoring to secure a ship for this and other shipments of general produce to South America, but so many difficulties are presented in such an enterprise and at such a time that it is somewhat doubtful at present writing if the hopes of those interested will be realized. Should the venture be successfully carried through the market would be relieved to a considerable extent, although even at that it is questionable if the prices would be up to anticipations. The consumer is always wide awake to market conditions and is just as ready to take advantage of conditions favorable to low prices as the grower is to take advantage of an extraordinary demand.

An Anomaly.

Talking of potatoes a Fraser Valley correspondent has the following interesting observation to make:

A peculiar feature of the potato market in the valley is the fact that while city grocery stores advertise potatoes at from 55 cents to 75 cents per sack retail or at the rate of \$11 to \$15 per ton at present, local settlers are charged from 80c to 90c per sack or at the rate of \$16 to \$18 per ton

right where the potatoes are grown and this too, in the face of the fact that to get them into town would cost the grocer \$2 per ton. The majority of farmers are holding all produce for an expected great advance in price and on all sides potato pits are being built. It was to a great extent the same in connection with the fruit, where it was not left rot on the ground, and it applies also to grain and hay, and now a like course is being carried out with the potato crop. Should the expected advance price not materialize, it is hard to tell what the outcome will be for some of the farmers.

THE MANAGEMENT OF SOIL.

Prof. L. S. Klinck, dean of agriculture, University of B. C., addressed the Chilliwack Farmers' Institute during the month on "The management of the different types of soil."

Three Kinds of Soil.

Mr. Klink, in opening his address, said that some people looked upon soil as a dirty substance and not to be discussed, but instead it was a real living substance with a highly productive power. There were three kinds of soil namely: sandy soil, clay soil, and peat soil. Sandy soil was noted for its dryness at all seasons and was good for producing early crops. Very little manure was needed and barnyard manure was preferable to straw. Some people were of the opinion that sandy soil was light, but that was contrary to fact from the standpoint of weight. What was really meant was that the soil was easily cultivated and this was due to the fact that the particles were larger and did not fit so closely as clay soil and therefore did not cake. Sandy soil, however, was at a disadvantage in a very dry season as the moisture did not stay on the top to succor the plants but leaked through. In order to counteract this leakage, continued the speaker, well rotted barnyard manure should be used in preference to straw. Highly decomposed manure tended to bind together the particles and keep the moisture on the surface of the ground. It also had a tendency to draw the moisture up quicker. Straw manure would act in the opposite way by keeping the moisture from rising—especially rye straw. Shallow ploughing was best for sandy soil and rolling or harrowing should take place immediately after ploughing.

Clay Soil.

Turning to clay soil, Mr. Klinck said the particles were very much finer and therefore baked closer together. In the spring, clay was slow in drying out unless under-drained. Deep cultivation was necessary for this class of soil in order to turn up a portion of the sub-soil. Breaking or harrowing should not take place in the spring time, but rather in the winter time when heavy frost would materially assist in making the perfect tilth.

The speaker went on to show that heaviness in clay soil was a defect and might be remedied by the use of straw manure and plenty of tillage. In regard to the sub-soil plough, Mr. Klinck was of opinion that the best results were obtained by ploughing a little deeper with the ordinary plough and by planting deep-root crops occasionally. Lime improved the texture of clay soils; it acted as a binding process and brought the particles closer together and also facilitate the water to pass through more readily and so keep the soil from getting water-logged.

Peat Soil.

In regard to peat soil Mr. Klinck said



Synopsis of Coal Mining Regulations

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

Applications for a lease must 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 should be furnished at least once a year.

The lease will include the coal mining rights only, but the lessee may be permitted to purchase whatever available surface rights may be considered necessary for the working of the mine at the rate of \$10 an acre.

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.

N.B.—Unauthorized publication of this advertisement will not be paid for.—58782.

that this soil was for the most part made up of decayed lumber, rubbish and vegetable substance. Its productiveness depended more upon its degree of decomposition—the older and more decomposed the better the soil became. Peat soil was generally loose and open in texture and should be opened up and exposed to the sun and the air before seeding and after seeding should be packed. Peat soils were always rich in

Concluded on page 771

NEW INDUSTRY FOR BRITISH COLUMBIA.

Great Opportunity for Unemployed to Collect "Sea-grass" or "Eel-grass" Along Our Coast.

At the present time, when so many are wondering where they can turn to earn a few extra dollars to help them to tide over the ensuing winter, no more welcome news could be wished for than to learn that there is a market for another of British Columbia's untapped natural resources, and that the province may benefit to the extent of several thousand dollars annually.

A letter addressed to Dr. A. D. Buchanan, Vancouver, was received from a firm in the Eastern States making enquiries as to whether "Sea-grass" was obtainable on the West Coast. Enquiries were made at the local firms likely to deal in this commodity, but none were able to supply the desired information. On the other hand it was ascertained that local upholsterers were importing from the United States a substitute which costs much more than "Sea-grass." Dr. Buchanan finally called at the Botanical Office, Vancouver, and discussed the subject with Provincial Botanist J. Davidson and was informed that the so-called "Sea-grass" was a native plant of economic importance, and that it grows on many parts of the coast along the mainland and on the islands, more especially on the west coast of Vancouver Island where it is prolific.

In order to help our readers to recognize this plant the Botanical Office has supplied the following details:

"Sea-grass" is known under many different names, Eel-grass, Grass-wrack, and Sea grass being the more common ones. Botanically, it is known as *Zostera* and is one of the few examples of a plant which is fertilized through the pollen grains being transferred through water.

"Sea-grass" is a mis-nomer, the plant is not a true grass; and although it grows in the sea, entirely submerged in salt water, it is not a sea-weed. It is a true flowering plant, producing its flowers and fruits under water. Its usual habitat is on sandy, peaty, or muddy beaches which at low tide, are more or less exposed when the tide recedes. Its name is derived from the fact that the plant is green and grass-like and grows in the sea. Its roots—or rhizomes as they are technically called—are firmly imbedded in the beach, and from the joints or nodes it sends up long flattened stems bearing grass-like leaves to a height of from 1 to 6 feet, it is those stems and leaves which, when collected and dried, are at present much in demand in the East; one firm estimates they can use 250 tons per month.

It is used on a large scale in many parts of the world for stuffing mattresses, and as a packing material for glass-ware; taxidermists find it valuable for stuffing specimens, and it is used as a substitute for horsehair in various kinds of upholstery. In some parts of B. C. ranchers cart it from the beach and use it as a fertilizer for the soil. No doubt if they could procure several dollars per ton for this they would have funds to purchase commercial fertilizers of greater value and have a margin left over.

It appears that American firms obtained their supplies in former years from the coast of Nova Scotia but that owing to the war the supply is not forthcoming, some of the collectors having gone to the front, others having found other employment.

Most owners of motor launches in B. C.

are familiar with the "Sea-grass," and avoid littoral waters in which it abounds, on account of the tendency to clog the propeller; in many parts along our coast it is washed up in large quantities after a storm.

On some parts of the coast of England "Sea-grass" is washed up in such large quantities that it forms banks 20 to 30 feet in height near high water mark, being the accumulation of many years. It is possible that similar banks may exist in B. C. although up to the present day they have not yet been recorded.

In the east, collectors construct wooden racks on the beach and throw the "sea-grass" over these to dry in the sun, frequently turning it as one would do in hay-making; it is then baled and shipped in car loads.

It is expected that if a sufficient number of collectors can be got on the Pacific Coast, a plant will be established in B. C. to prepare it for the market by washing it to get rid of superfluous salt, kiln-drying, blowing to get rid of sand or other impurities, and baling it for shipment. The location of the plant cannot be decided on until reports have been received from various parts of the province as to where "sea-grass" is most abundant. In order to assist those interested in the project the provincial botanist has undertaken to identify specimens of plants supposed to be "sea-grass." It may be mentioned that another plant known botanically as *Phyllospadix* is common on rocky coasts and is liable to be mistaken for *Zostera*. It is possible that it may serve the same purpose but, as far as known, it has not been tried.

Collectors can send sample specimens by post at book-post rates labelled "Botanical specimens" and addressed to "The Provincial Botanist, Botanical Office, Vancouver, B. C." A letter should also be sent stating: The locality where found, and the approximate area inhabited by "sea-grass" so as to give some idea as to the quantity likely to be obtained.

It is expected that the dried "sea-grass" will be purchased from collectors in quantities from 100 pounds to a ton or more, but the price cannot at present be given until the cost of cleaning and transportation has been ascertained. No doubt however, this will afford an opportunity for many individuals to earn something during the winter and the experience gained will enable them to take up this work next year with a view of earning a good livelihood.

PROSPEROUS SEASON FOR B. C. FARMERS.

"The crops throughout the southern Interior have been very good this year, and a bumper harvest of wheat and other grains, fruits and other products is assured," said the Hon. William R. Ross, Minister of Lands, in an interview following upon his return from a trip through Kamloops, the Boundary and Kootenay districts, upon which he accompanied the Hon. W. J. Bowser, Attorney-General, who later proceeded to Ottawa to take up the cause of the manufacturers of British Columbia in connection with the supply of a greater quota of the war materials required by the Federal and Imperial governments.

"From Victoria, we proceeded to Kamloops," said Hon. Mr. Ross, "and we were both greatly impressed with the excellent showing made by the farmers of that district at the Kamloops Exhibition, then in progress. There was a striking array of wheat and grains grown in that district, and the exhibits from the dry lands of Rose Hill,

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to the south of Kamloops, were indicative of the great possibilities of dry-farming, the method practiced by the farmers in that section. These exhibits were especially interesting to me in view of the experimental work which my department is now undertaking in the Lillooet and Nicola districts to demonstrate the value of modern dry-farming methods, more especially at higher altitudes in the dry belt where the rainfall is scant and irrigation not applicable. These experiments are meeting with much success, and the results attained to date promise much for the success of this method of farming in the dry land areas of the province. There were some excellent grain exhibits from the dry farms of Rose Hill at the Kamloops exhibition. It was a most satisfactory display and the district might well feel proud of the success of its annual fair.

"From Kamloops we proceeded by motor through Grand Prairie and Armstrong to Vernon, where the tented lines of the martial young men of the province preparing to uphold the honor of their country overseas was a sight that stirred our pride.

All Crops Good.

"From Vernon we proceeded to Kelowna and Penticton, the crops in both districts showing up to much advantage, and thence went over Anarchist Mountain to Bridesville. The showing made on the farm lands in this section was little short of astonishing. They were magnificent. This is an excellent grain-growing section, and the stands of wheat and other grains were splendid; also the fruit in the various fruit-growing localities. The orchards bore very well, indeed, this season, and it is expected that the good results attained in previous years will be surpassed.

"From that district we motored to Midway, and thence to Greenwood, where we were met by the member for the district, Mr. J. R. Jackson, who accompanied us to Grand Forks. Thence we went on to Rossland, and were met by the member for Ymir, Mr. Schofield, and he went on to Nelson with us. From Nelson we went to Cranbrook and thence to Fernie.

"At every point visited during our trip we found conditions brighter than was to have been expected at such a time as this, when the thoughts of all are upon the great war more than aught else. The crops were good throughout the farming sections, and we were informed that good prices were being secured. The mining industry was busy, the mines and smelters, which were working to the full, offering employment to very many. At Fernie industrial conditions were very fair and, as elsewhere, the residents were optimistic. The reduction of the labor supply as a result of the internment early in the summer of a large number of alien enemies had resulted in giving steadier employment to more British Columbia workers and this condition was later improved by the departure of a number of Italian reservists. The brisk demand from the smelters for coke had resulted in an additional output, the smelters in the Boundary District being now worked to practically their full capacity. Lumbering conditions were very promising for a full winter's work. There was a brisk market in the Prairie Provinces. There is a steady demand for labor in the mills, and no great surplus of workers who are unemployed.

"On the whole, conditions throughout the southern interior are steadily improving and the harvests were never better."

CANADIAN POTATO EMBARGO REMOVED.

The regulations which have been in force since 1912 requiring the inspection and certification of potatoes in Canada before they could be exported at all to the United States were repealed by order-in-council Oct. 7. The Minister of Agriculture found that after a most careful examination and investigation extending over many months there is nothing to justify the charge made two years ago by the United States that there was evidence in Canada of the disease known as potato canker, or powdery scab.

The American authorities have apparently come to the same conclusion and it is understood that the United States regulations providing for the entry of Canadian potatoes into the States will shortly be repealed. The embargo was put on in 1913 against Canada, and also against the states of Maine and New York, where it was thought that the disease existed. The embargo against Maine and New York has already been abolished and the embargo against Canada will probably also be removed promptly.

METHODS OF POTATO PLANTING.

Last year an experiment was designed to illustrate the advantages of adopting up-to-date methods in the cultivation of potatoes. The old method of growing potatoes consisted of taking seed directly from the pit for planting in the spring and of applying only farmyard manure to the crop. Experiments have been carried out on an extensive scale to show the benefits resulting from the individual operations of (a) sprouting seed potatoes in boxes before planting; (b) the use of a suitable mixture of artificial manures; and (c) the spraying of the crop. In this test these three operations have been combined and tested against the older and less intensive method, at 31 centres in 14 counties.

The tests were carried out with the leading maincrop varieties under conditions as uniform as possible, and at each centre seed from the same source was selected, but for one plot it was sprouted in boxes during the winter and for the other plot it was allowed to remain in the pit until spring. On the average the total increase in yield from sprouted plot over the other was exactly 4 tons per statute acre. The increase in the yield of saleable potatoes was rather more than 4 tons per acre and there was a smaller number of diseased potatoes.

WHY SHEEP ARE PROFITABLE.

T. R. Arkell, of the Dominion Farm at Ottawa, gives the following points of the advantage of sheep-raising:

The sheep is a dual purpose animal, producing both wool and mutton.

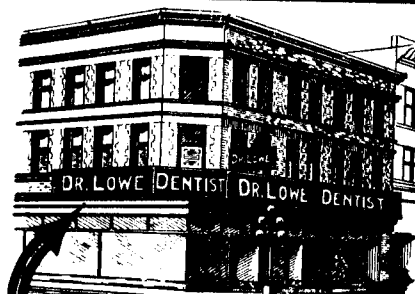
The initial expenditure is small. Every farmer can well afford the investment of the necessary capital in a few sheep.

Rapid monetary returns are received, the wool clip and the lamb crop being saleable annually.

Expensive buildings are by no means necessary. A warm lambing pen is required, but for the aged sheep, a sheltered shed to protect them from the winter winds is sufficient.

Weed destruction represents another asset. Sheep will eat and relish almost every class of weed.

Sheep admittedly improve soil fertility. Their manure is rich and uniformly distributed.



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Except at certain seasons of the year less time and attention need be bestowed upon the care of sheep than in almost any other animal without thereby endangering successful results.

MUSHROOMS.

The culture of mushrooms is by no means a specialist's job. It simply requires intelligent observance of the general principles of soil cultivation. The market for mushrooms, if grown on a commercial scale, is in our cities, although many are so fond of these that they are grown for home consumption. They can be grown in regular hot houses, out-houses, stables, sheds, cellars or in frames out of doors. When planted out of doors they should be grown in sheltered places.

One of the important operations is the making of the bed. This should be done as follows: Take good fresh horse manure, and shake out the longest of it, leaving the balance in a heap. Allow the heap to remain about a week, then turn it three or four times, allowing two or three days between each turning. Care should be taken at each turning to thoroughly mix the outside with the middle, so that by this process the whole of the manure becomes sweet. At the last turning it will be found to have lost its rank, sour smell, and it will then be in good condition to make into a bed. During this process the material should not be allowed to become soaked by rain, consequently some temporary roof should be built above it. If, on the other hand, the material becomes too dry to heat it should be sprinkled lightly with water. It usually takes 12 or 15 days to cure manure, before it is ready to go into hot beds. It is in best condition when the temperature of the manure is 100 deg. F.

Making the Beds.

Flat beds are recommended for this country. These beds may be made in a dark cellar or basement, and if some rich, loamy soil is available, this may be satisfactorily used in the proportion of one part soil to four or five parts of manure. The manure alone is considered to be the most satisfactory by commercial growers of mushrooms. Whether manure alone or soil and manure are used the materials should be thoroughly mixed, and the bed firmly tramped before planting the spawn.

Planting the Spawn.

Mushrooms may be grown at any season of the year, but winter is considered a very good time on account of the demand at that season of the year. They are grown from spawn, a foundation material from which all fungus plants grow. This mushroom spawn is sold commercially by seed merchants, from whom all particulars can be secured as to the cost and best form to buy. Suitable pieces of spawn for planting are about two inches in diameter. If brick spawn is used, a single brick will make ten or twelve such pieces.

When the beds are first made, the temperature is too high for immediate planting of the spawn. A thermometer should be placed in the bed, and when the temperature is from 70 to 75 deg. F. is the proper time to plant. In planting, a hole is made so that the pieces of spawn fit tightly into it. Each piece is put about two inches underground, and the soil firmly packed around it. The pieces should be set 8 or 10 inches apart in the bed. When planted, the

beds are left for about a week, and in the meantime may be covered loosely with excelsior or straw to prevent too rapid evaporation of the moisture, and also to prevent too rapid lowering of the temperature.

Casing the Beds.

The last process consists in covering the beds with an inch to an inch and one-half of rich soil, called casing the beds. The object in casing with soil is to retain the temperature within the material, which is necessary for the maintenance of growth, and it also provides a firmer and cleaner medium in which the stems of the mushrooms are formed, making them cleaner when picked. In about six or seven weeks mushrooms will appear.

MORE CANADIAN MEAT TO GO TO WAR OFFICE.

A score or so representatives of the meat packing industry in all parts of Canada were in conference with Hon. Martin Burrell, John Bright, the livestock commissioner, and the markets branch of the Department of Agriculture in connection with the negotiations now under way to sell the whole Canadian exportable surplus of canned and dressed meats to the War Office for the army and navy. The War Office has already undertaken to purchase at fixed prices large quantities of canned meats through the Department of Agriculture, and has intimated that if a Canadian tender for dressed beef is low enough large orders will be placed through the Department of Agriculture for all kinds of chilled meats.

Owing to the lack of refrigerator space and the high ocean freight rates and insurance, Canadian dressed beef has for the past few months found a market only in the States at comparatively low prices. It is understood that a considerable portion of the Canadian meats sent to the States has been re-exported to Great Britain. The negotiations now on with the War Office look to the sending of several million dollars of the Canadian product direct to Great Britain. The packers agreed to co-operate with the Department of Agriculture and it is likely that arrangements will be made in the near future with the War Office for a steady supply at remunerative prices from Canada. The Department believes that permanent beneficial results will follow from the shipment now expected and that a large and steady market from Great Britain will be secured not only during the war but after it is over. The problem of transportation was discussed today and representations will be made to the Imperial Government looking to the facilitating of shipping arrangements during the war. It is believed that the exports of Canadian dressed beef to Great Britain can be easily doubled under proper assurances as to market and transportation and if the arrangements now in view are carried out there will be a steady flow of prices in Canada and a very important stimulus given to the stock raising industry.

Month of October, Kelowna, B. C.

Weather has been ideal for harvesting. Picking has continued without interruption. Shipments of apples have been made to Buenos Ayres, Australia, New Zealand, London, and Cape Town.

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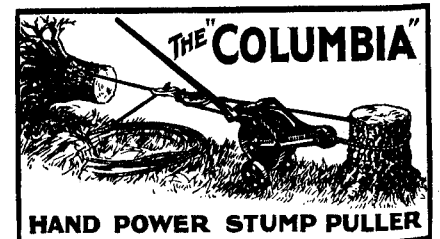
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PRUNING FRUIT TREES.

1. Prune heavily when the tree is young, so as to give it the framework desired.
2. Quit pruning when the tree gets older.
3. Cut off the fruit spurs from the main branches just as soon as they form.
4. Practice summer pruning on the older trees.
5. Do all you can to discourage wood growth.

Do not be afraid of taking the fruit off the tree when you are summer pruning. Prune down until you have a reasonable amount of fruit left, and do not leave too many. Thin after you prune. The pruning is used largely as a thinning.

You can advantageously prune the pear tree during the first summer. Select and cut the "outer buds" on the branches, so as to throw the framework of the tree outward. Save twelve inches of clean, clear stem. Select a good, strong bud on the inside of the middle limb, and seek constantly to turn the growing branches outward, so as to make an open, strong top through which the sun's rays will penetrate and the air circulate freely.

At the third pruning commence to remove every indication over half spur from the main stem, keep them off entirely in a circle reaching over half the top of the tree. Prune very hard up to the fourth year and up to the beginning of the growth of the fifth year. From this time on you are to prune for fruit. Do nothing to accelerate a heavy wood growth after the four years of growth. We would change as quickly as the season changes from one system of pruning to the other; that is, change from winter pruning for wood to summer pruning for fruit. We follow this system with pears in order to produce a hard wood which is resistant to pear blight.

After the change from winter to summer pruning, do just a little pruning during the winter season, cutting out all crossed and diseased branches, but leave most of the pruning for August. This is after the trees are four years old.

In the case of a four-year-old pear tree which has not had the severe cutting back as outlined above, and if it is a well-grown tree, practice summer pruning at the first opportunity. If it is not well grown or properly formed, we would do a little winter pruning to get the branches in desired places. A healthy pear tree can be cut back severely.

In the case of cherry trees you will have a very strong wood growth, straight and upright, a one-year-old tree sometimes reaching five feet in height. Usually it has lots of good, strong buds all the way up. It may have a branch or two. If it is a straight switch, we cut it off 24 to 36 inches from the ground. We want the branches as far apart as possible on account of gumosis. If cherry branches are all together in a case of this kind the load will become too heavy. Cracking and splitting will ensue, and the tree will become subject to gumosis. As the limbs increase in size, they will crowd together, splitting and cracking.

Cut back the cherry tree as severely as you do the pear tree for the first four or five years. With cherry trees you do heavy pruning for wood when the leaves are off the tree, and the last pruning is done in the spring. Injury may happen to your sweet cherries by freezing or thawing, in which case we let them stand until the bud starts in the spring. Then we prune. The essential points are:

1. Prune heavily while the cherry tree is young.
2. Get good strong active growth.

3. When the trees are three or four years old, change to summer pruning almost the same as you do with the pear.

4. Instead of pruning just before the crop is harvested, prune to correspond to the time just after it is harvested.

The Bing cherry, if given half a chance, will hold its leaves late in the fall, until the first heavy frosts. The cambium layer of wood is in this way killed. In the spring such a tree will start out just as usual, and will then die. Do not permit the tree to grow too late, but harden it up so it will lose its leaves early in the fall. Irrigating too late in the fall may produce this trouble.

In setting out peach orchards we prefer June buds, though the use of yearling trees is not discouraged entirely. Cut the June bud from 12 to 15 inches of the ground. Prune it severely. The yearling trees may be 12 to 15 inches, or even two feet. Cut them back severely. On rich soil a growth of three to five feet will take place the first season. Three to five branches are all that is necessary in the framework of a peach tree, though five to seven are used in other trees. Treat sour cherries the same way, using a little bit longer stem. The sour cherry will not get high anyway. Prune very much the same as you do for apples, leaving them a little longer than the apples. Frequently we leave these 18 to 24 inches in length. We pay very little attention to the small branches that appear. Just let them stay as they are. Suppose you are planting a one-year-old peach tree, and it has a lot of branches on it. You may treat them in two ways: (1) Cut these off close to the stem, not injuring the little bud on each side of the stem, of course; or (2) strip them off two inches in length. Either way will give satisfactory returns. Then get the large branches headed back. Do not "shear" the tree. Prune it.

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MONEY FROM HOGS.

Hogs are making their feeders good money in all parts of Canada. It is no uncommon sight now to see a drove of black or white, sleek, fat ones on prairie farms. They scout around the wheat stacks and stubbles and get fat and good-natured with little extra looking after. A special pig pen can be easily constructed of ordinary woven fence wire and if it is carried over the top and supported with posts, the straw stack can be thrown over it and the hogs will have a cheap winter pen. Brood sows do best running outdoors around the stacks provided they are not worried by cattle. They require little besides two or three ears of corn, a mangel and good water at a feed.

Keep a box of salt, charcoal and sulphur mixed where they can reach it. Spray all fattening hogs for vermin. Keep the pens scrupulously clean and use plenty of straw.

Have farrowing pens fixed up so as to prevent losses.

The hog is a difficult animal to treat when attacked by disease, and hence the breeder must adopt every possible means to prevent disease from entering the herd. An ounce of prevention is worth a pound of cure.

Filth is an excellent breeding ground for disease germs. Care should be taken to have the pens cleaned frequently, and pens should be so constructed that there are no places for filth to accumulate where it cannot be cleaned out. Watertight floors with as few cracks and corners as possible, together with adequate drainage are important in a piggery.

Acquire the habit of using disinfectants freely. There are numerous good patent disinfectants on the market. Crude carbolic acid and creolin are excellent. A five-per-cent solution of either will be found effective for disinfecting pens. Chloride of lime is also good and is especially recommended for pens where cholera has existed. Five or six ounces of chloride of lime to a gallon of water make an effective disinfectant. Sunlight is one of the best disinfectants, and an effort should be made to admit plenty of direct sunlight into all pens.

SUCCESSFUL SALE OF PEDIGREE STOCK AT COLONY FARM.

The annual sale, of the pedigree young stock, by public auction at the Government Farm at Essondale was attended by breeders from various parts of the Province as well as the state of Washington.

The bargains were exceptional. Among the horses were Clydesdale and Shire fillies with the best official backing. "Welcome Pride," a Clydesdale stallion, foaled in March 1914, and whose dam "Peggie Pride" is one of the greatest brood mares ever brought to Canada, was offered.

Mr. T. J. Trapp, the auctioneer of the horses, tried to impress on provincial horsemen that while the bottom might be out of the horse market now, after the war there was bound to be a very big demand abroad. Professor Hislop of the Washington State College said that on the other side of the line the market was beginning to pick up now, and it would not be very long before animals of this class would be demanding three times the money being paid for them at the sale.

The State of Washington is to claim many of these horses. Those to cross the border follow: "Colony Winsome," a filly whose sire is "Bowhill Baron" and whose dam is "Craigie Winsome Guest," "Wel-

come Baron," "Colony Ahita," "Tandridge Conqueror," "Colony Forager," and "Colony Heroine."

"Tandridge Rambler," who has headed the farm stud on the Shire side, was also offered, but the highest bid of \$1,100.00 did not reach the reserve. All the horses sold but one were bred on the farm.

CATTLE.

The Hon. Duncan Marshall, Minister of Agriculture for Alberta, introduced by the Hon. Dr. Young, Provincial Secretary, spoke of the good the dissemination of the young livestock would do for the Province. On the Prairies British Columbia is regarded as a place where they raise lumber and fruit, and they will be glad to learn that we also produce good livestock. There could be no question that in this country, as in any other, the foundation of farming that would last was livestock. It was also beyond doubt that good livestock would solve the problem of the ministers of agriculture and others interested in "how to keep the boys on the farm." It is a great attraction to boys, and many of the best livestock farmers on the continent owe their start and their success to the fact that their fathers bought them some good stock of their own. What they did here would assist the other provinces. Nothing would stimulate the livestock of one province like the good stock of an adjoining province, and he was pleased to be here to congratulate Dr. Young on what this province was doing, and on seeing so many breeders here. The outlook for livestock was never better in the world's history, and the wise farmer was he who would go in for good livestock, and at the head of the herd have the best bull he could acquire.

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Seed Branch, Ottawa.

KEEPING UP THE MILK YIELD.

It is well known that by delaying the time of service after calving the milk yield of a cow is kept up, and a higher record within a given time is obtained, and in forming a true opinion of the milk record of any cow it is necessary to know the length of the interval between the calving date preceding the record and the calving date following it. In order, therefore, that the records entered in a register may be comparable it is sometimes made a condition of entry that the cow calve again within 13 or 14 months.

B. C. FRUIT AND FARM JOTTINGS.

Continued from 761

parts of the province, we may reasonably expect that these teachers will come to have a large and growing influence on the young people in arousing and developing new interests along agricultural lines.

The annual convention of the Western Live Stock Union, an organization representative of the industry in Canada, from the Great Lakes to the Pacific Coast, will be held at the Empress Hotel, Victoria, B. C., on October 27th and 28th. At least 35 delegates will be in attendance, representing 13 or 14 live stock associations in Manitoba, Saskatchewan, Alberta and British Columbia. The business session will be presided over by Dr. J. G. Rutherford, C. M. G., head of the Live Stock Department of the Canadian Pacific Railway.

What is believed to establish a record for even this land of tremendous crops was made this season by J. T. Mutrie of Vernon. On 6½ acres in that city he harvested 206 tons of onions, or an average of about 32 tons to the acre. The onions were of the Yellow Globe Danvers variety, and no particular preparation was given to the land, which received a light application of 400 lbs. of commercial fertilizer to the acre this spring. At the ruling price of \$14 per ton, in bulk without sacks, paid by the evaporating plant at present, this crop will bring Mr. Mutrie a return of \$2,884 or about \$443 per acre. It looks as if a crop of this kind might be said to pay fairly well even at the exceptionally low prices prevailing this season.

DISTRIBUTION OF SEED GRAIN AND POTATOES.

From the Dominion Experimental Farms. 1915-1916.

By instructions of the Hon. Minister of Agriculture a free distribution of superior sorts of grain and potatoes will be during the coming winter and spring to Canadian

BOOKLETS TELL OF DISEASES OF ANIMALS.

Continued from page 763

well indicated by the fact that two decades ago a single small island (Block Island) off the Rhode Island coast, provided two tons of marketable birds each year. Five hundred pounds are not available in the same locality today. Statements are also current that in localities in Ontario where 10 carloads were to be had eight years ago it is now difficult to secure two carloads. The reason given for the falling off in production is the difficulty of rearing stock that can withstand this infection." This quotation is sufficient to indicate the importance of this bulletin, which treats of the origin and course of the disease and of its prevention and cure. Appropriate plain and colored illustrations add to the value of the publication.

The second bulletin, numbered 18, has for its title, "Avian Tuberculosis." Dr. Higgins, pathologist, and A. B. Wickware, V. S., assistant pathologist, are the joint authors. It is hardly necessary to allude to the importance of checking and suppressing a disease that affects alike birds, beasts and man. The authors show that the complaint can be transmitted by domestic pets to those who caress them and in the reverse direction. Details of experiments made at the Domin-

ion biological laboratory are given in the bulletin, which also describes the symptoms, steps in prevention that can be taken and remedial treatment that can be applied.

In both bulletins poultry breeders and all persons interested are invited to send cases to the biological laboratory, Department of Agriculture, Ottawa, for investigation.

THE MANAGEMENT OF THE SOIL.

Continued from page 765

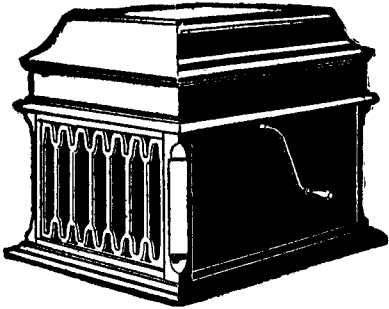
nitrogen and so should always be opened up in order that the nitrogen might be converted into the available form for the plants' use. Peat soil was good for growing carrots, mangels, turnips and barley.

A discussion then ensued and in reply to queries Mr. Klinck gave the following answers:

1. Burned lime is better for clay soil than hydrated or slacked lime.

2. It is better not to mix lime with barnyard manure as the lime is liable to burn the vegetable matter and each should be administered separately.

3. In order to determine the amount of lime that the soil requires it is necessary to test the soil and the most practical experiment can be made with the use of litmus paper.



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farmers. The samples will consist of spring wheat (about 5 lbs., white oats (about 4 lbs.), barley (about 5 lbs.), and field peas (about 5 lbs.) These will be sent out from Ottawa.

A distribution of potatoes (in 3 lbs. samples) will be carried on from several of the Experimental Farms, the Central Farm at Ottawa supplying only the provinces of Ontario and Quebec.

Each application must be separate and must be signed by the applicant. Only one sample of grain and one of potatoes can be sent to each farm. If both samples are asked for in the same letter only one will be sent. Application on any kind of printed form cannot be accepted.

The destruction by fire of the cereal building at Ottawa, which contained grain-cleaning machinery and a large stock of seed grain for distribution, may make it necessary to curtail the distribution to a certain extent. We shall fill as many as possible of the applications which conform to the rules; but requests received after the end of December will probably be too late. Samples cannot be sent in response to applications (no matter when received) which fail to state clearly the needs of the applicant, his experiences in crop-raising, and the character of the soil on which he intends to sow seed.

All applications for grain (and applications from the provinces of Ontario and Quebec for potatoes) should be addressed to the Dominion Cerealists, Central Experimental Farm, Ottawa. Such applications require no postage. If otherwise addressed, delay and disappointment may occur.

Applications for potatoes from farmers in any other province should be addressed (postage prepaid) to the Superintendent of the nearest branch Experimental Farm in that province.

J. H. GRISDALE,

Director, Dominion Experimental Farms.

MANGE IN HORSES.

A mange mite known as the symbiotes, because it is found in groups, attacks the hind fetlocks, and occasionally all four limbs. A horse which stamps continually at night is often suffering from this disease. The sarcoptic form, if allowed to run on, often causes serious trouble; but the other forms are very amenable to treatment. All the affected parts should first of all be thoroughly washed with hot water and soft soap, applied with a hard brush, to remove all the scabs. A currycomb may be necessary to loosen the scabs where they have hardened. Dressing should then be applied, of which there are many different ones prescribed. A good one is linseed oil, seven parts; spirits of tar, one part. This should be put on thoroughly every two or three days, washing with soda and water between each dressing. The mites may be transferred to other animals, so every precaution should be used, and swabs, etc., burnt after use.

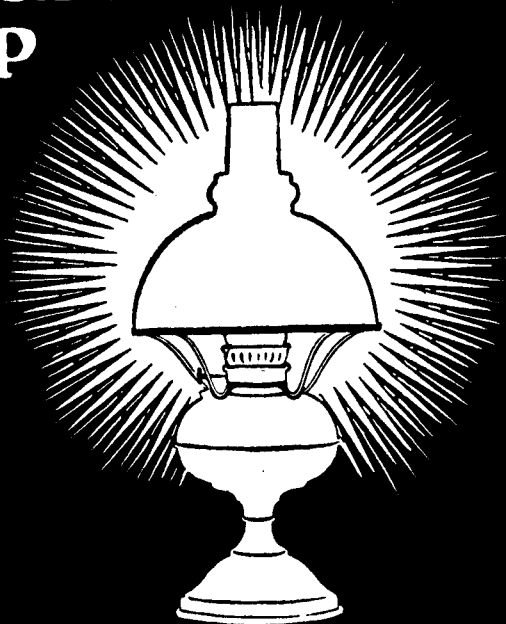
INTERESTS OF PUBLIC PROTECTED BY ACT.

Report of Dominion Department of Agriculture Refers to Activities During Past Year.

The report of the minister of agriculture for Canada for the year ending March 31, 1915, is a full and complete story of the operations of the department in all its divisions and branches. It is consequently a very informative publication. There is a deal in the report of which every municipal officer as well as every one interested in

Concluded on page 778

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ROYALITE OIL GIVES BEST RESULTS

Hints for Beginners in Bee-Keeping.

By WM. HUGH.

Those who are anxious to commence the practical study of bee-keeping during the winter months can do so by making themselves acquainted with the hive, and learn how to wire frames and put in the wax foundation, to make up sections ready for section honey, the use of the bee escape, queen excluder, and the structure of the super. The hive generally in use in B. C. by the majority of experienced bee-keepers is the Langstroth, invented in 1851. It is either a ten or eight frame one with a division board. It is simply a plain box with a rabbit at the top of each end. The frames and division board hang from the rabbit, on all sides of the frames there is a space called the bee way. This allows a free passage for the bees. If this passage is too large the bees will construct comb in it, if too small they will fill the passage with propolis. When this occurs the novice will find much difficulty in drawing out the frames for examination and occasionally, owing to the frame sticking to the side of the hive, will be pulled apart. The frame is 9 1-8 by 17 5-8. This must be well nailed together and then wired with number 30 tinned wire. The holes are usually ready made in each end of frame to receive the wire, so that when a full sheet of wax foundation is placed in the groove or saw cut on the under side of top bar of frame the foundation will hang parallel with the wire, the wire is then heated with an embedder and pressed into the wax, care being taken that the embedder is not too hot or holes will be made in the wax. There are many advantages in having the frames wired, there will be no fear of the drawn out comb falling away from the frame during hot weather, or when manipulating the full frame and it is almost impossible to ship hives full of bees without wired frames. Above the brood chamber or main body of the hive is the super, in this is placed shallow extracting frames or sections on section holders. The novice should commence with sections. They will find it to their advantage if they put full sheets of thin foundation in the sections instead of starters. Here let me say there is a right and a wrong way to put in comb foundation. This must always be put in with the apex of the cell towards the top of the section. Before folding the section, dampen the joints, this will prevent the joints breaking. The beginner should purchase a 10 or 8 frame hive and super complete in the flat. This is called in the trade a 1 1/2 story hive; examine every portion thoroughly, and before putting together, all the external parts should have a prime coating of paint, build the several parts into a complete hive with the aid of a carpenter's square. You will find when this has been accomplished that you have commenced the business of bee-keeping on a good foundation. Now practice the manipulation of the frames as mentioned in Bulletin 30, issued by the Department; by doing so you will see the advantage gained when you commence in the spring with a colony of bees, then you have ready a hive to receive the first swarm. The super can be placed on the colony when the honey flow commences.

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own hives, and to the man away in the bush, this is a great consideration, when he realizes he only need purchase wax foundation, a reel of wire, the brood frame and sections.

BEE DISEASE.

There has appeared among the honey bees of the north western States and particularly in the state of Washington, during the past summer, a malady not unlike the Isle of Wight disease, and from reports received is quite as deadly and destructive. While a thorough diagnosis by men qualified to make such has not been made, beekeepers should be on the look out for any appearance of the disease in their apiaries, in view of the similarity of the symptoms of the I. of W. disease and the proximity of this province to the state of Washington. In a recent issue of the Seattle Times there appeared the following: "Jeopardizing the entire 1916 fruit crop of the Pacific Northwest, a mysterious scourge, so far baffling the specialists, has already decimated fully fifty per cent. of the bees in this state, and is threatening, unless some remedy is found, to destroy completely the bee industry in Washington. Professor Trevor Kincaid, one of the best informed entomologists in the United States, has lost more than half of his own bees, and has received a number of letters from all over the state informing him that honey-making insects are dying by the thousands. He believes that practically half of the honey producers in the state are dead; and as these insects are largely instrumental in pollenizing the fruit-trees, the growers will face a serious problem next year if the ravages of the mysterious disease are not halted. The professor said, 'I thought at first that the disease was bee paralysis, but further investigation has convinced me that it is a complaint that is analogous to malaria or sleeping sickness in the human family. I have expectations of being able to work out a cure.' It may be that the disease is being spread by bumble bees. Ordinarily a bee is a fierce fighter, and is well qualified to take care of itself; but since the disease has appeared among them they have become easy prey to their enemies."

Another bee-keeper in describing his observation of the symptoms writes: "Bees were hopping on the ground, and were to be found in batches on the ground with their heads together as if starving, but the hives contained plenty of stores." He found the same condition in other yards, the disease appears to "attack the larvae, from three days old to that about the time the larvae is burst its cocoon." This brief description of the disease attacking the bees in the state of Washington will enable bee-keepers to compare the symptoms of that virulent disease, called by bacteriologists, microsporidiosis of bees. I will give you a brief statement of my own and others' observations. Bees lose their power of flight, they jump forward and tumble down when leaving the alighting board. They will climb up stems of grass then fall to the ground. The wings perform a trembling motion, and appear to be disjointed, in some cases, bees are able to flap their wings. This inability to fly is probably caused through the overlaid abdomen and in some instances the inability to void the excreta. Dysentery must be looked upon with suspicion. I have seen large numbers of bees crawl out of the hive and die on the alighting board and in front of the hive. Occasionally bees die in the hive. Apparently they were perfectly healthy, with plenty of stores. When packed for the winter, upon examination the whole colony was found to have died. Drones die of the disease, but strange to say, the queen bee does not—she is usually the last to succumb—it is thought—through starvation. It has been noticed that the foragers or field bees are generally the first to be attacked. There appears to be a general disinclination to work, the bees crawl slowly over the combs and lay around; when this state of affairs exists every precaution should be taken to prevent the spread of the disease and mitigate its severity. While no remedy has been discovered for the I. of W. malady, a few preventive measures may be recommended. Cleanliness is most essential as dirty surroundings lower the vitality of bees, and render them liable to attack.

Concluded on page 781

Gardening for the Home

By H. M. EDDIE, F.R.H.S.

(Our readers are invited to submit any troubles or difficulties which they may encounter, to Mr. Eddie, who will be glad to give them his advise, the outcome of technical training and practical experience. Address letters to the Editor.—B.C. Fruit and Farm Magazine.)

November may be said to end the gardening, at least as far as crops are concerned, and those who had the energy and enterprise to do something in the way of vacant lot gardening, will be able to calculate how far success has attended their labors.

In balancing accounts only actual cash paid out for seeds, fertilizers or other materials ought to be reckoned with. The labor, unless hired, will have been performed in the spare time and might have been expended less productively in other ways; indeed it may well be placed on the credit side of the ledger as having contributed materially to savings on doctor bills. From my own observations the results from the vacant lot gardens have been various, sometimes most gratifying, more often, I am afraid, the reverse. To those in the former class I tender my congratulations and trust they may be encouraged to redouble efforts another year, and to those in the latter I would say, try to find out the cause or causes of the disappointing results, if possible, have them remedied, and adopt as their slogan the old proverb, "If you do not first succeed try, try, try again."

In very few instances which came under my notice was neglect or poor cultivation the cause of indifferent results, in some it was the soil that was at fault, in others it was the want of moisture and often those two causes combined nullified the most laudable efforts on the part of the gardener. The want of sufficient moisture in the soil is a serious obstacle and can only be overcome by artificial watering, and unless the facilities for this are ample I would not advise the spending of time and money on soil no matter how suitable in other respects if it does not retain sufficient moisture to mature crops; true enough early short season crops such as lettuce, radish or early carrots may be grown before the soil dries out but it is useless to attempt long season crops like potatoes, onions, parsnips, celery, etc. The month of November is a good time to commence preparations for another year and likewise to remedy some of the causes of this year's failures; and as I have already mentioned that according to my observations the causes of failure oftenest lay in the soil. The best way to find the various remedies will be to study the various kinds of soils. For practical purposes, and to illustrate those most likely to give trouble to the gardener we will divide the soil into three classes viz: Sand, clay and peat.

An ideal soil would be a happy blend of all three.

Sandy and gravelly soils are composed of more or less minute particles of rock and are usually very deficient in plant food; because of their porosity they are also very liable to dry out in summer, the

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liability increasing with increasing coarseness of texture.

A large proportion of the soil in the vicinity of Vancouver and New Westminster belongs to this class and, incidentally, was the kind on which the poorest crops were grown this year. To correct the deficiency of plant food there is no better fertilizer to use than good stable manure, and plenty of it; this serves a double purpose in the soil by supplying plant food and helping to bind the loose particles of soil together thus rendering the whole more retentive of moisture. This class of soil in B. C. is that which is naturally most favored by fir trees and as the fur appears to have a deleterious effect on subsequent vegetation it is well to start cultivation early so that the soil may get the full benefit of the winter's rains and frosts; but owing to its porous nature it is better to leave the manuring until late winter or early spring otherwise much valuable plant food will be wasted.

A clay soil is composed of extremely fine particles of sand and other materials bound together by a sticky substance commonly called essence of clay and is usually well supplied with plant food especially potash.

A clay soil is usually cold and sour because of its retentiveness for water so that drainage is the first thing to be considered in its improvement.

Large quantities of coarse manure from the barn is valuable in the improvement of a clay soil, for, paradoxical as it may seem, humus consolidates a sandy soil but makes a clay soil more porous. Frost has a very ameliorating effect on clay by causing the essence of clay to coagulate, so that fall digging or ploughing ought to be practiced and the surface left as rough as possible through the winter.

Lime has an effect similar to frost but has the advantage of correcting sourness and is in itself an indispensable plant food; being soluble in water it ought to be applied as a surface dressing in the winter.

Contrary to the first mentioned class of soil, manure ought to be incorporated with clay in early winter to assist in its aeration no fear being entertained for the plant food contained therein as clay has wonderful properties for retaining such.

Peaty soils are almost directly opposed to the former classes, whereas they are almost entirely inorganic peaty soils are almost entirely organic, being built up from the decaying remains of previous vegetation. As the cause of their origin was in the first place waterlogging the first step in their improvement is usually through drainage. They are almost certain to be sour and a good dressing of lime will be necessary as a corrective, applied as advised above for clay soils.

Fall digging or ploughing is also beneficial in this case, exposing the organic material to the action of frost and air. The beneficial bacteria found in all good soils are almost entirely wanting in peat and the best way to encourage their development and increase is to thoroughly aerate and sweeten the soil.

Large quantities of organic manures are not desirable in this case; this is where the artificial article has the preference over the domestic by-product. Substantial dressings of bonemeal, muriate of potash and sulphate of ammonia, the former in early winter the two latter in early spring combined with liming and good drainage will go a long way towards concerting a useless swamp into a productive garden.

PLANTING BULBS.

Directions for Planting Tulip and Narcissus Bulbs—Cultivation and Treatment.

If you would have rich beds of tulips or give the beds or the corners of your lawns a beautiful springlike yellow or white glow of narcissus, daffodil and jonquil, you must begin to think of the early spring appearance of your garden in the fall, for the bulbs of these flowers must be planted in the fall before the ground is frozen. In fact, this



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work should be undertaken as soon as or before an early frost has begun to make the annual flowers in the beds look weakened. In dealing with narcissus, which is the family to which the daffodil and jonquil belong, it might be well to think of trying to naturalize the narcissus to grow and blossom on the lawn much as do the wild flowers. How to plant and handle the bulbs, as well as the best method of getting them to become spring residents of grassy corners, are described in the following directions issued by the bulb specialists of the department.

These bulbs should be planted in light, rich soil that has been dug to a depth of at least 10 inches. The tulip bulbs should be set 5 inches apart and 4 inches deep and the narcissus bulbs about 10 inches apart and 5 inches deep.

If they are to be grown in pots or window boxes, light, rich soil should be used. Place 1 to 2 inches of cinders or broken pots in the bottom of the pots or boxes to insure good drainage. After planting, place the pots or boxes out of doors and cover them with about 4 inches of ashes or sand; or they may be placed in a dark cool room or cellar for a few weeks until the bulbs have formed a quantity of roots. They may then be brought into the light and heat for flowering. Keep the soil well moistened from time of planting, but avoid overmoistening, for if kept too wet the bulbs will decay.

Cultivation.

If planted in beds, the surface of the soil should be loosened after each rain and the bed kept free from weeds. In the late fall or early winter months, it is well to cover the beds with a light mulch of straw or leaves to prevent injury to the young roots from the alternate freezing and thawing of the soil. This mulch should be gradually removed in spring, as soon as growth appears above ground. The bulbs are quite hardy and are not injured by severe cold if the soil is well drained.

Lifting and Dividing.

Tulip and narcissus plants are perennial, and if given proper care and grown under suitable soil and climatic conditions will increase and multiply from year to year. The bulbs may remain in the ground two or three years, or until the clumps begin to crowd. After blossoming in the spring, from six to eight weeks should elapse to allow the foliage to die partially down, when the bulbs may be lifted with a spade or fork. Shake the soil from the roots and store the bulbs in a cool, shady place where they will ripen and cure. When the old leaves and roots are thoroughly dry they may be easily rubbed off and the clusters of bulbs divided. The bulbs may then be planted in the same manner as the original bulbs. In this way the stock may be increased in a few years.

Naturalizing the Narcissus.

The narcissus often becomes naturalized when planted in the sod or partial shade, where it will continue to grow, blossom, and multiply for many years without further attention. Simply make a small hole in the soil 5 or 6 inches deep, insert the bulb pointed end up, press the soil over the top,

THE LEADING INSECTICIDE deserves the **LEADING FIRMS** to handle it. **PHYTOPHILINE THE GREAT INSECTICIDE AND PLANT TONIC** is accordingly for sale at the following well-known houses in Vancouver and New Westminster: **BRITISH COLUMBIA NURSERIES CO., LTD.**, 1493 Seventh Avenue West, Vancouver; **CHAS. KEELER, Florist**, 145 Fifteenth Avenue East, Vancouver; **BROWN BROS., Florists**, 48 Hastings Street East, Vancouver; **A. R. McDOUGALL, Seedsman**, 524 Kingsway, Vancouver, B. C.; **WM. RENNIE CO., LTD.**, Seedsmen, 1138 Homer Street, Vancouver; **RITCHIE BROS. & CO.**, Seedsmen, 840 Granville Street, Vancouver; **DAVIES & SON, Florists**, Columbia Street, New Westminster. Grade 1 for general use; Grade 2 for spider and woolly aphid on extremely delicate plants; Grade 3 for spider, woolly aphid, mildew, rust, etc. Postpaid prices, 55c, 85c, \$1.55 and \$2.80. **CASH WITH ORDER.** Application for agencies, etc., to—**PHYTOPHILINE DISTRIBUTORS, 1493 Seventh Avenue West, Vancouver, B. C.**

RENNIE'S BULBS

Now is the time to plant Hyacinths, Tulips, Daffodils, etc., for early Spring bloom in the flower garden and for winter bloom in your home. Send for our new Fall Bulb Catalogue.

WM. RENNIE CO., LIMITED

1138 Homer Street

Vancouver, B. C.

Also at Winnipeg, Toronto and Montreal

and nature will do the rest. For naturalizing, avoid planting in rows or rigid geometrical figures. A good plan is to scatter the bulbs like seed and plant where they fall. This method of planting is extensively followed in the home grounds and parks of England and other countries in Europe. In portions of North Carolina, on large estates along the James River in Virginia, and in old gardens in New England narcissus that were planted over half a century ago are still growing vigorously and every spring produce beautiful displays of blossoms.

CARE OF FRUIT AND FLOWERS.

Plant daffodils, tulips, crocuses and all spring-blooming bulbs now.

After the frost kills the dahlia tops, leave the roots in the ground for about ten days, then on a mild day, dig them up with plenty of earth around them, and let them dry out in the sun and wind. Then put them away in the cellar, banked up and completely covered with dry earth. The earth will absorb any excess of moisture, preventing mold, and will also keep the roots from shrivelling or decaying, as they are likely to do when put away in boxes.

Peonies may still be planted, but get them in as early this month as possible, and then mulch the soil around them.

Get protective litter in readiness to be spread at short notice if nightfall brings promise of a freeze.

Grapes are purpling. Do not cut away the leaves on the vines to expose the bunches. The action of the sun on the leaf is what is necessary to make the sweetest fruit.

Go over the fruit trees for signs of disease, and pull out and burn anything seriously affected—root and branch. Send specimen branches to your county or Provincial agricultural department.

OUR SPECIALTIES

MIXED FERTILIZERS

BRANDS

"A," "B," "C," and "D"

- NITRATE OF SODA
- SUPERPHOSPHATE OF LIME
- THOMAS' PHOSPHATE (Basic Slag)
- BONE MEAL
- LIME-SULPHUR SPRAY
- SOLUBLE SULPHUR COMPOUND (Nicotine Sulphate)
- "BLACK LEAF 40"
- ARSENATE OF LEAD
- SULPHATE OF IRON

No order too large for our capacity, none too small for our careful attention

The Victoria Chemical Co., Ltd.

VICTORIA, B. C.

WRITE FOR CATALOGUE

This is a good time to do white-washing generally out of doors. Nothing surpasses a good coat of this as a purifier.

PLANT NOW

BRAND'S BULBS

FOR BEAUTIFUL BLOSSOMS

In The Spring Garden and The Home During the Winter Months. Catalogue and Guide Free on Request.

JAMES BRAND & CO., SEEDSMEN, 723 ROBSON ST., VANCOUVER, B.C.

POULTRY SECTION

IN THE POULTRY YARD.

Choose now your breeders for next season. Feed grain by scattering in the litter.

Secure an ample supply of litter material. Leaves are good.

Stimulate the pullets to laying by feeding a little green bone.

Get the poultry into winter quarters before the end of the month.

How about that supply of road dust for the dust baths and roosts?

Scald nests and roosts with hot water containing a dash of carbolic acid.

Keep the young stock under cover during the cold, rainy days of October.

Try the fresh-air plan this winter. Substitute muslin for glass in poultry house windows.

Burn all old nesting stuff and provide new before putting the poultry in winter quarters.

Colds and croup are often the result of drafts and dampness during the cooler weather. Both can easily be avoided.

Get in a supply of vegetables and dried clover for winter green food. Mangels, turnips and cabbages are excellent.

Get rid of all surplus cockerels and old hens. Feed is too high in price to keep any boarders that do not pay their way.

Don't let any of the poultry get the habit of roosting in trees. It will be hard to cure them of it when cold weather comes.

The brooders and roosting coops that were used during the summer should be thor-

oughly cleaned, and stored away indoors for next season.

Divide the pullets into small flocks, keeping each age, color, and size by itself. They will develop better in small flocks.

In planning next spring's matings, which should be done now, put the pullets with strong, healthy, two-year-old cockerels.

If there are any late molters among the flocks, remember that a few handfuls of sunflower seeds daily will help to loosen up the old feathers and cause the new ones to come in smooth and oily.

FATTENING POULTRY FOR THE MARKET.

Susan Swaysgood of Pomona, tells farmers in a recent paper how they can fatten poultry for the market.

Any farmer who has a few cows, or even one or two cows, can start a fattening plant on a small scale just for his own and perhaps a neighbor's surplus fowls. The first thing is to make a coop that will hold, say a dozen head. The front should be of stout round wire and just far enough between the wires to admit a chicken's head without sticking. Some make back and front of the coop of this wire and the ends of slats or lath, to allow ventilation. The coop must be placed out of the hot sun or sheltered from rain, but in some place where lots of fresh air can reach it. Make long troughs the length of the coop, about three inches deep and four inches wide;

make them tight enough to hold liquids. These are fastened to the coops by wire hooks, to make them easy to remove and clean.

Bear in mind chickens must be in fair condition when put in these coops, this is only a finishing process. Now, with troughs and drinking cups in place, sort out your chickens, or grade them, as you would any other produce. Cockerels of one size and about as near one weight as possible should be put together, and even then there will be a difference in the gains. The short thick-headed bird will put on flesh faster than the one with a long slim head and neck. Color of feather is not of any importance. And white skin is very important. All white skinned birds, if well fattened, will grade as number ones because they can be what is called bleached. The bleaching is accomplished with condensed milk, while ordinary feeding or fattening is done with just plain buttermilk or sour milk churned, to make it smoother. For the first twenty-four hours after putting the birds in coops give them nothing to eat at all—serve water and grit and just let them get good and hungry.

Commence to feed light after the twenty-four hours, a feed of equal parts cornmeal, shorts and low grade flour, adding a little salt just as an appetizer. Mix the feed to a rather stiff dough with buttermilk or sour milk. Cut out the water and only give water when the weather is very hot. Then

1916 Promises to be a Most Profitable Year For Poultry Rearers.

Sitting hens are scarce when most wanted early in the year, and to make Poultry Keeping Pay, chicks must be hatched early.

THE HEARSON INCUBATOR

will hatch every fertile egg in any temperature and at any altitude. It is much more reliable than a hen and is always ready when the eggs are. There is no incubator made to equal Hearson's. The purchaser of an incubator represents a considerable outlay and in your own interests you should not fail to investigate the merits of every machine which you may have in your mind. Ask the opinion of your poultry journal, well known breeders, and others who have had practical experience, and carefully read the book entitled "The Problem Solved,"

which will be sent you free by us on request. If the Hearson was not the best incubator we could not afford to invite such searching investigation.

Hearson's Patent Hydrothermic Foster Mother,

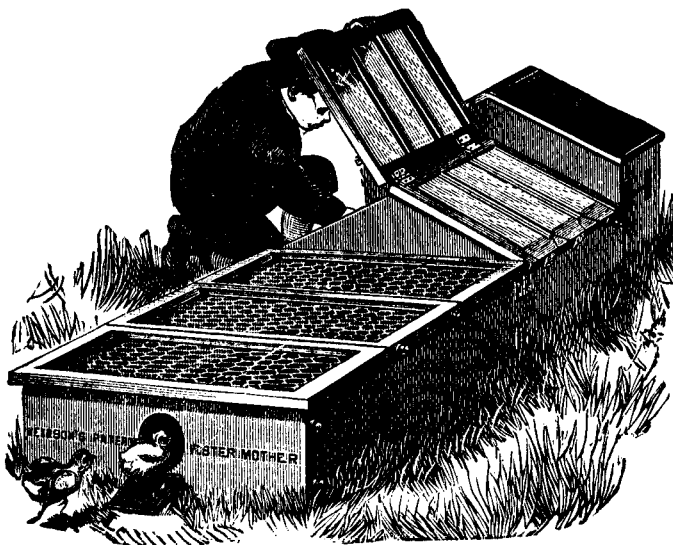
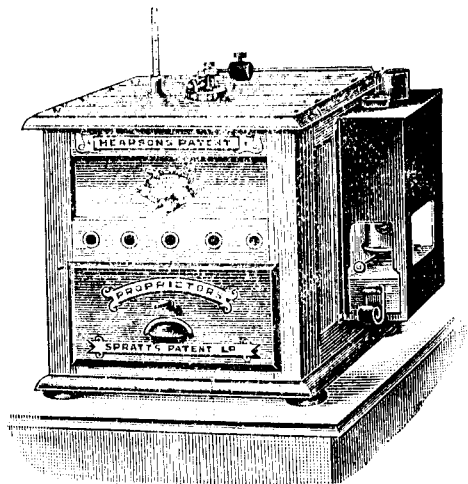
an outdoor or indoor, rearer for chickens, substantially built, will rear every healthy chick. Hearson's Hydrothermic Foster Mother consists of three chambers, viz., a sleeping compartment or dormitory, a glass covered run, and a wire covered run. The dormitory is heated by means of a petroleum lamp which burns in a windproof lantern situated at the rear; this imparts the heat to a copper tank filled with hot water which occupies the upper part of the dormitory.

For the convenience of our friends and customers in Western Canada we carry a complete stock of Hearson's Incubators, Foster Mothers and accessories in Vancouver. These are on exhibition and can be seen at the office and warehouse of our Western Agents,

MESSRS O'LOANE KIELY & CO., LIMITED

37 to 43 Alexander St., Vancouver, B.C.

Catalogues furnished upon application.



after they drink take it away. If they appear thirsty, mix feed a little thinner.

Watch for Those That Don't Eat.

After a few days of this feed change to more cornmeal and more flour, giving less shorts. If oats can be had as cheap as flour with the hulls taken off is especially good, but the birds must have a chance to keep up the appetite. It is a case of watching for the ones that fail to eat. Mix every bit of feed with the buttermilk or sour milk. The more condensed the milk is, that is, the less water you leave in it, the better and quicker your chickens will fatten. But even though you have no milk at all, you can still make big money fattening your own poultry, by feeding beef scrap and tallow instead of milk. During the last week of fattening with milk it is advisable to add melted tallow to the feed at a ratio of 6 per cent.

If the feed contains no milk the birds would stand 20 per cent of beef scrap for a short time, but too long might take them off their feed. If oatmeal could be bought as cheap as flour or cornmeal there is not a bit of doubt but that either would make much bigger gains in both flesh and fat, but they are almost out of the question at present prices. If the chickens show any signs of gas or watery crops serve charcoal for one or two meals and it will absorb all the gases.

Tallow added to the feed puts the fat on the carcass in ridges, but milk spreads it over, so you can suit all fancies by catering to them, and believe me the day has come for the American farmer to cater to the markets.

Two weeks to one month is all that chickens will stand this intensive feeding and still keep an appetite, so this is the point to watch: When the appetite begins to flag it is time to sell.

Keep the troughs clean and sweet by daily scalding with boiling water and airing them; and never feed more than the birds will eat at one time. Failure to attend to this will clog the appetites of the best birds, then it is all over. Keeping them just a little short makes them ready for the next meal and they cannot help putting on flesh.

ABOUT THAT WATER PAN.

How often do you clean the water pans in your hen house? You ought to clean them every day. For a dirty water pan is the surest way of spreading disease throughout your flock.

The best way of handling water in the poultry house is to keep it in a cheap, flat wash basin that can be easily cleaned and refilled. It doesn't pay to bother with patent water tanks. You will have to fill them just as often as the basins, and they are harder to clean up.

Place the open basin on a box some eight or ten inches high and perhaps eighteen inches square, and make a runway for it. This keeps it from filling up with dirt and straw from the floor, and the hens do not climb into it in drinking.

Then put the box and basin in a sunny corner of the house away from the roosts and nests, so that no dirt can fall into it from above.

Clean it and refill it with clean, fresh water every day and you will have put the disease germs to flight indefinitely.

Write to James G. Halpin, Secretary of the Wisconsin Poultry Association, Madison, for stencilled sheets on poultry raising.

DON'T MIX.

Poultry of different ages and breeds.

Make Your Hens Lay More Eggs

Do not expect your poultry to pay unless you feed them with correct foods to make them produce properly.

Royal Standard Scratch Food

keeps the hen busy. Those who raise poultry for profit say emphatically it the best scratch food on the market. Only the cleanest, choicest grains are used, positively free from smutty wheat, dirt, and other waste matter. You have not been getting the full results possible to get from the feeding of your poultry if you have not been using . . . **ROYAL STANDARD SCRATCH FOOD**

Send For Free Sample Today

Other famous Royal Standard brand poultry foods—Sunflower Seed, Hemp Seed, Millet, Kaffir Corn, Beef Scraps, Ground Bone, Medium Grit, Oyster Shells, Clam Shells, Charcoal (medium or fine).

VANCOUVER MILLING & GRAIN CO., LIMITED
VANCOUVER, B. C.

COUPON FOR THE SAMPLE
Gentlemen:—Send me free sample of Royal Standard Scratch Food.

Name

Address

City-Province

Eggs of different sizes, ages and colors.

The market pays from two to three cents more for eggs of uniform size, color and quality.

AUTUMN-SOWN CARROTS.

If carrot-seed is sown at once, fair-sized carrots can be dug early in December. It is of no use leaving them in the ground after the weather has become permanently wintry, as they are not a winter root crop. Choose a short-rooted variety. These progress the more quickly. The culture would consist in one-spit digging, but no manuring either before or after sowing. Feeding before sowing leads to forked roots, and stimulating the plantlets later on makes the leaves sappy and so less hardy. The rows might be nine inches apart. Since large roots are not possible from this sowing, thin to four-inch intervals. Thin directly the seedling can be handled, for so soon as they are thinned the roots develop. Carrot seed stick together. It is better rubbed into dry sand, and sand and seed sewn. The soil covering could be under the half inch.

TURNIPS AND TURNIP TOPS.

Turnips are a quickly grown crop. Sown now, bulbs will be ready for digging in November. This sowing will be perfectly hardy. In a warm corner another sowing might be made in a month's time. The plants from this late sowing grow at intervals through the winter, and both tops and bulbs are edible in spring. Cutting a portion of their foliage while young does not considerably reduce the side of the bulbs. The seed of both sowings could be sown in lines a foot apart, thinning finally to eight inches. Let the seed be between

a quarter and half an inch deep. In matter of soil preparation, clean bulbs sown when soot, lime, or a soil-insecticide is worked into the ground, and when the preceding crop has not been one of the brassica (cabbage) family. The Latin name for the turnip is brassica napus, which explains the danger of infection from the germs of the club-root fungus. Turnips will keep for a long while in a dry room. Straw thrown over the bulbs in the ground will protect them from many degrees of frost. This frost-protecting litter must be removed during open winter weather to allow light to keep the bulbs healthy. Some gardeners earth up the row to shelter the roots from frost. Against this procedure insects are more likely to get at the crowns when under the soil than when the crowns are exposed to the weather. A temporary layer of straw will not harbour pests, for then the weather is too cold for them to be upon the surface.

The old established firm of Messrs. Ritchie Bros. & Co. are now located at 840 Granville Street, where their famous Gold Medal seeds and bulbs can only be obtained. Messrs. Ritchie Bros. are specialists in seeds and bulbs, having been all their lives in the business. They have been years selecting their pedigree stocks of seeds and bulbs, having an Old Country branch they are now offering the public of B. C., stock which is surpassed by none. For the benefit of out-of-town customers a very attractive catalogue and guide, illustrated throughout, has been issued and can be had free on request. You are invited to send a trial order and there is no hesitation in saying you will become a regular customer as they can be depended upon for supplying nothing but the best.

NEWS FROM FARMERS' INSTITUTES

N.B.—All Subscriptions (or renewal subscriptions) to *FRUIT AND FARM*, which are forwarded through secretaries of Farmers' Institute will be accepted at the reduced rate of 75c. per annum, instead of \$1.00

RE STUMPING POWDER.

October, 6, 1915.

Secretary Farmers' Institute:

Sir,—I have the honour to inform you that the powder companies with whom this Department have made arrangements to supply Farmers' Institutes powder, fuse and caps have notified the Department that an advance of \$1.50 per 100 lbs. will have to be made on all grades of high explosives from October 1st. This increase in the price of powder has been anticipated for some time, owing to the great demand for all materials in connection with explosives occasioned by the great European war, and also on account of the abnormal rise in the cost of certain ingredients.

"Low Freezing" and "Dualin" stumping powders are now quoted at \$12.70 per 100 lbs., or \$6.35 per case, whilst Dynamite of 30 per cent. strength is quoted at \$13.20 per 100 lbs.

For fuller details, apply either to the Canadian Explosives Co. Ltd., Victoria, or to The Giant Powder Co. Con. of Vancouver, B. C. So far as the Department is advised, there is no advance anticipated at present in the prices of fuse and caps.

I shall be glad if you will make the above new prices known to the members of your Institute.

I have the honor to be, sir,
Sir,

Your obedient servant,

W. E. SCOTT,

Deputy Minister and Superintendent of Institutes.

ORGANIZE FARMERS' INSTITUTE.

At the home of Mr. C. Plowden, Plowden Bay, Howe Sound, a meeting was held on Saturday to organize a Farmers' Institute. Much enthusiasm was shown in the movement, and the organization will be completed a fortnight hence, when it is hoped all living in that neighborhood will attend. Those present were: Mr. and Mrs. E. R. Linfoot, Gambler Island; Mr. and Mrs. Frederick Johnson, Mr. and Mrs. Wm. E. Johnson and Mrs. W. F. Gibson, McNab's Creek; C. L. Pearson, Ideal Ranch; Mr. and Mrs. H. G. Mellon and Mrs. C. J. Bell, Port Mellon; Mrs. G. E. Cates, Seaside Hotel; Mrs. J. E. McLeod, Rainy River; Mr. and Mrs. H. C. Plowden and Miss Wigstone, Plowden Bay. After an animated discussion of the proposal, tea was served, at which Mrs. Mellon and Mrs. McLeod poured, assisted by the Misses Johnson and Miss Wigstone.

KALEDEN.

A meeting of the Farmers' Institute was held on Saturday afternoon, October 16, for the purpose of considering the purchase of pure bred stock. Nothing definite was arrived at but the subject is to be taken up in the near future when more information will be at hand.

THE OYAMA FAIR.

Great local interest was manifested at the first annual exhibition held at Oyama October 20, by the Farmers' Institute. The directors succeeded in securing and very effectively displaying an exhibit of the products of the orchard, garden and field, as

well as of domestic skill, which much older and more extensive communities might envy.

The centre of the agricultural hall was utilized for the magnificent box display of apples, while the plate exhibits were arranged on tables.

Late Strawberries.

Much interest was centred around displays of late strawberries and raspberries as well as a very fine arrangement of Muscat and Alexandria grapes. No feature of the various collection, however, excited such favorable comments as the attractive demonstrations of the many toothsome dainties which can be made from the apple. These included apple charlotte, dumplings, jellies, combinations with boiled rice, pies, catsups, apple snow, etc.

Opened by Mr. Ellison.

The gallery overlooking the hall was chosen by Mrs. Trask, the untiring and efficient secretary, for her office, and it was from this coign of vantage that Mr. Price Ellison, addressed the assemblage when opening the exhibition. Mr. Ellison said he addressed the people of Oyama rather as a friend and neighbor than as the member for Okanagan. He congratulated them upon their splendid effort, and said that in many respects this was said that in many respects this was the best exhibition he had ever opened.

CHILLIWACK FARMERS' INSTITUTE.

There was a very representative number of farmers at the public meeting held in the city hall on Saturday afternoon, October 16, under the auspices of the Farmers' Institute, to hear the address given by Prof. L. S. Klinck, dean of agriculture, University of B. C. The speaker gave a very practical address on the method of managing the different types of soil, which was of much interest to those present among whom were a number of school teachers.

The Dominion Telegraph and Wireless Institute is now in a position to accept pupils for a thorough course in Wireless Commercial and Railway Telegraphy at a reasonable rate. The most up-to-date Marconi equipment installed. Our instructors are masters in their profession. Our college is thorough in every respect. Young men and women take advantage of this great opportunity.

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Get a Farm of Your Own

TAKE 20 YEARS TO PAY if you wish. The land will support you and pay for itself. An immense area of the most fertile land in Western Canada for sale at low prices and easy terms ranging from \$11 to \$30 for farm lands with ample rainfall—irrigated lands from \$35. Terms—One-twentieth down, balance within twenty years. In irrigation districts, loan for farm buildings, etc., up to \$2,000, also repayable in twenty years—interest only 8 per cent. Here is your opportunity to increase your farm holdings by getting adjoining land, or secure your friends as neighbors. For literature and particulars apply to

F. D. CAMERON, Gen'l Supt. of Lands
Dept. of Natural Resources, C.P.R.
CALGARY, ALBERTA

INTERESTS OF PUBLIC PROTECTED BY ACT.

Continued from page 772

agriculture and the public health might be advantageously become possessed. In particular has this reference to the regulations relating to tuberculosis formulated for the purpose of insuring a pure and wholesome milk supply for cities and towns and especially to prevent the sale of milk from tuberculous cows. In this connection it might be mentioned that the department undertakes, through the veterinary director-general, to aid any city or town acting under the regulations to carry them out and to control bovine tuberculosis. Owners and managers of cold storage plants are reminded that under an order in council of June 20, 1914, they must give the public the preference in the use of refrigerated space and must not contract to give said space to one firm to the exclusion of the said general public. Particulars are given of amendments to the Destructive Insects and Pests Act. Information is also conveyed relative to trading with the enemy.

Summaries of reports regarding dairy operations will be found of value, especially as regards arrangements for refrigerator car service, for the proper carrying out of which by the railway companies the department holds itself responsible. From May to October the railways in Ontario, Quebec and Nova Scotia must run refrigerator cars weekly or fortnightly for the carriage of butter at regular rates and without extra charge for icing. Commencing from the middle of June and for 11 weeks hence the department pays icings charges up to 5 per car for the conveyance of cheese. Similar arrangements are in force for the carriage of fruit from August 1 to October 1. The work of the seed commissioner's branch, which gains in importance yearly, is told in detail, as is that of the live stock branch, the activities of which are farther reaching than ever they were. A full account of the grading of wool is given. Reports from all the Dominion experimental farms and stations indicate the wide scope of the work that is being done and the remarkable variety of tests and experiments that are undertaken. This part of the report will be found especially enlightening relative to the comprehensive nature of the operations at the farms and stations. Details of the proceedings of the fruit and entomological branches are deserving of minute attention, being both instructive and useful. The publication branch, from which the complete report can be obtained free, also receives attention, as does the branch of the Canadian commissioner of the International Institute of Agriculture. Particulars are given regarding the issuing of patents of invention and a summary of the work of the director-general, Dr. Torrance. An appendix contains the reports of the director-general of public health and his staff and of Canadian exhibition commissioner, William Hutchinson, relating to Canada's exhibit at the Panama exposition, San Francisco. It also gives the text of the British order in council restricting the importation of dogs, all of which have now to be licensed to land.

Target Tips and Hunting Helps

By ALFRED P. LANE

T. L. G., Vancouver Island.

I would be greatly obliged if you would let me know through the columns of your paper, to which I am a subscriber, what 10, 12, 16, etc., bore or gauge means when speaking of shotguns.

Ans. Gauging of shotgun barrels is a custom originating way back in the muzzle-loading days. A 12 gauge shotgun, for instance, is one having a bore which will just fit a round ball of lead weighing one-twelfth of a pound. A 16 gauge shotgun is one having a bore which will just fit a round lead ball weighing one-sixteenth of a pound. Of course these dimensions are not absolutely adhered to, but are near enough for practical purposes. This is the reason why the larger the gauge number the smaller the actual diameter of the bore of the barrel.

Terre Haute Reader.

Kindly print the penetration, energy, trajectory of the Savage .303, also the velocity of the same.

Ans. The velocity, 1,952 ft. seconds; energy, 1,658 ft. lbs.; penetration, soft point bullet, eleven 7-8 in. pine board; trajectory at 200 yards, height at 100 yds., 5.98 in. Omaha Reader.

1. Which is the most powerful, the 250-3000, 32-40 Hi-Power or .303 Savage?

Ans. The figures for these cartridges are: 250-3000, muzzle velocity, 3,000 ft. secs.; muzzle energy, 1-720 ft. lbs. 32-40 Hi-Power, muzzle velocity, 2,065 ft. secs.; muzzle energy, 1,558 ft. lbs. .303 Savage, 1,952 ft. seconds; muzzle velocity, 1,658 lbs. muzzle energy.

2. Which is the best all 'round big game rifle?

Ans. A choice between high power rifles depends entirely upon the hunter's personal preferences and prejudices.

3. What is the effective killing distance of the above three cartridges? Would the 250-3000 be powerful enough for grizzly bear and moose?

Ans. It would kill effectively at 300 to 400 yds. I would hardly recommend this cartridge for grizzly bear or moose.

4. About what size game would the .25 Rem. be effective on, and at what greatest distance?

Ans. 300 to 400 yds. on game up to and including deer.

5. What is the best size drop shot to use for all around shooting in a 16 gauge shell, 2 1-2 drams powder, 1 oz. shot—No. 4, 5, 6, 7 or 8 drop shot?

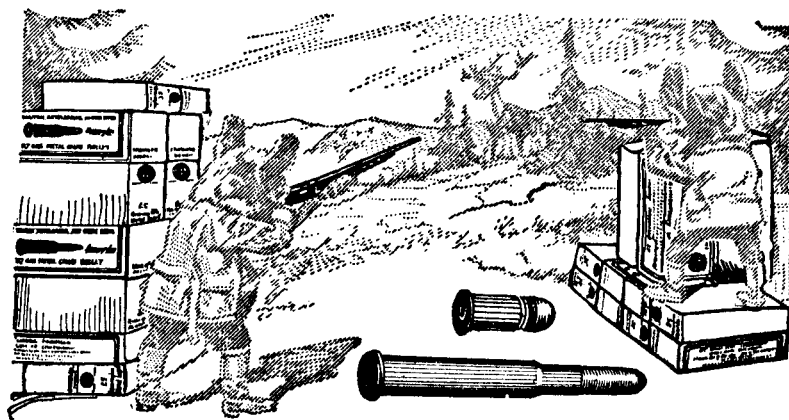
Ans. This question cannot be answered until I know what game you expect to shoot. The size of shot is determined by the game the hunter is after.

W. G. B., Gableton, Pa.

1. If a gun barrel has already been cut off 2 inches without hurting the patterns, will it hurt to cut it off two more inches? Where can I send a gun to have it rechoked, and what is the price of same?

Ans. If cutting off two inches of the barrel did not do it any harm, it is evidently a cylinder bore and cutting off a few more inches won't change the pattern. There is no way of having a gun rechoked.

Alfred P. Lane



For Any Chance or Emergency

The .35 Remington-UMC Sporting Cartridge will stop the biggest game. Remington-UMC .22 Short is the best small calibre cartridge made. Between these extremes are several hundred different calibres of

Remington-UMC Metallic Cartridges

for all Standard sporting and military rifles. All gauged in the Arm for which they're made. 50 years success behind them. Used by experts. Endorsed by rifle-makers. Remington-UMC Metallics guarantee your Arm to the full extent of the maker's guarantee.

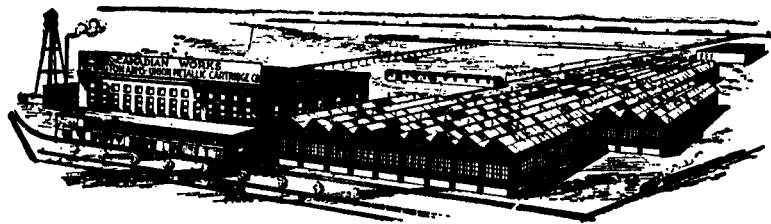
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Hallam's Three Books "Trapper's Guide" English or French 96 pages, illustrated, tells how and where to trap and other valuable information for trappers; also "Trapper's and Sportsman's Supply Catalog" "Raw Fur Price List" and latest "Fur Style Book" of beautiful fur sets and fur garments. All these books fully illustrated and sent FREE ON REQUEST.

Domestic Science Department

Edited by KATHLEEN FERGUSON

Christmas Cookery.

I spoke before of the necessity of a good housekeeper always looking ahead; this applies above all to Christmas time. If you leave everything until the last moment, there is unnecessary rush and worry. Some foodstuffs are more expensive and much of your Christmas happiness is spoilt, whereas by having all the Christmas cookery done when you have leisure, when eggs, etc., are cheaper and when you have not other things such as, cards, letters, etc., to think of, you can work in calm and peace. Most of Christmas cookery improves by being kept; this applies to plum pudding, mincemeat and plum cake. Some housekeepers cook such articles this year for next year and the food is improved thereby, but this requires, for some, too long a strain and in some hurry the food is eaten. I consider September or October the best month for getting off our hands the Christmas fare; the rush of the summer is over, and it is just between seasons, when we are glad of extra work to fill our time. We must also remember that eggs are cheaper in September than December, butter is cheaper, suet is more plentiful and we can get the first of the fresh currants, raisins, etc.; all essential points in good management. As it comes nearer Christmas the butcher cannot supply everyone with the prime beef suet, that is the suet usually surrounding the kidney; this is the richest and should always be called for where it is wanted for puddings. The thin suet does very well for rendering into drippings but is most wasteful for puddings, etc.

Some contend that it is ridiculous to do so much extra cooking at Christmas and that Christmas fare is very unwholesome; both these ideas are quite wrong—from time immemorial feasts and extra rejoicing were always accompanied with extra food and as to Christmas fare being unwholesome, I have it on good medical authority that the fare in itself is not unwholesome, but that it is so good people forget themselves and eat too much.

Another contention creeping in about Christmas is that it is such a bore, etc., etc.; let the housekeepers not listen to this, it is sad to put away the old ideas, nothing will replace them and the making of a "Merry Christmas" is entirely in the hands of a good housekeeper.

Having put these few ideas before you, I shall now give the recipes which will prove good and useful.

Mincemeat (1).—Take $\frac{3}{4}$ lb. of beef suet (chopped fine), $\frac{3}{4}$ lb. of raisins, stoned; 1 lb. currants (cleaned); 1 lb. of apples, peeled, cored and chopped fine; $\frac{1}{2}$ oz. of powdered mace; $\frac{1}{2}$ oz. of powdered cinnamon; $\frac{1}{2}$ oz. of powdered cloves; $\frac{3}{4}$ lb. of white sugar; $\frac{1}{2}$ saltspoonful of salt; the juice and rind of 1 lemon; $\frac{1}{4}$ lb. mixed peel, chopped fine; 1 glass of brandy and port wine mixed.

Take all these ingredients and put them into a bowl, mix them well with a wooden spoon, put into jars but do not tie down for a fortnight, then seal it in jars and use meat to stir it every day or every other day for a fortnight, then seal it in jars and use as required.

To chop suet—Get the best beef suet from round the kidney and shred it very fine before chopping it, in this way it may be chopped much more quickly. Where you have a mincing machine run it through the mincer, but be very careful to remove any skin which may cling to the suet.

NOTE—A child could make mincemeat, therefore there is no excuse for housekeepers buying it ready-made as it cannot be as good as the home-made material, no matter how good the firm that supplies it and also we have of course to pay more for it.

Above quantity makes four pounds of mincemeat, therefore for a small family half the quantity would do.

Mince Pies—Take mince pie tins (which can be had for about 10c per dozen) as many as you wish to make pies in, grease them and line them with pastry, fill the centres with the mincemeat having been careful to prick the pastry at the bottom of the tin with a fork to prevent it rising under the mincemeat. Take another piece of pastry and cover the top of the pie, pressing the edges together, first wetting the under edge with cold water. Bake in a quick oven for about 15 minutes. Sprinkle over with white sugar before sending to table. A little milk or egg brushed over the top of the pies just before they are baked gives them a gloss.

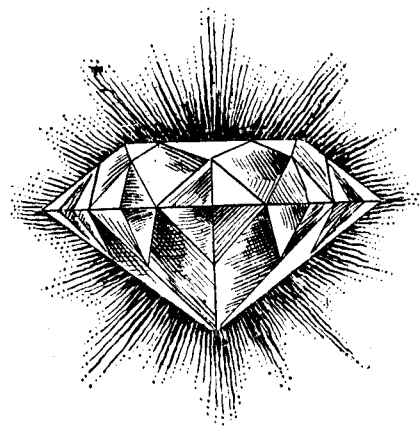
To Cut the Pastry for the pies use a sharp round cutter a size larger than the mince pie tin, and cut two rounds for each pie, one for underneath and one for covering the pie, then there is no trouble turning the pies. A fork pressed round the edge gives a little finish and keeps the pie together. If you have no cutter the lid of a coffee tin or baking powder tin if round does equally well. For those who do not understand pastry very well, I shall give details in a later lesson.

Mincemeat (2)—4 lbs. of lean beef; 2 lbs. of beef suet; Baldwin apples; 3 quinces; 3 lbs. of sugar; 2 measuring cups of molasses; 2 quarts of cider; 4 lbs. of raisins, seeded and cut in pieces; 3 lbs. of currants; $\frac{1}{2}$ lb. of finely cut citron; 1 qt. of cooking brandy; 1 tablespoonful (level) of powdered cinnamon and mace; 1 level tablespoon of powdered cloves; 2 grated nutmegs; 1 level teaspoonful of pepper, salt to taste.

Cover the meat and suet with boiling water and cook until tender, cool in the water in which they are cooked. The suet will rise to the top forming a cake of fat which may be easily removed. Finely chop the meat and add it to twice the amount of finely chopped apples. The apples should be peeled, cored and cut in quarters before being chopped. Add quinces finely chopped, sugar, molasses, cider, raisins, currants, and citron, also suet and stock in which meat and suet were cooked, reduced by boiling to $1\frac{1}{2}$ measuring cups. Heat gradually, stir occasionally, and cook slowly for two hours; then add brandy and spices. Above makes a very large quantity of mincemeat. One-fourth the amount would be sufficient for most families.

NOTE—In all Christmas cookery spirits are used but as many housekeepers object on principle to spirits in any form they can be left out; the general reason for adding spirits to Christmas cookery is not only to improve the flavor but to help in the keeping of the food for some time.

Plum Pudding (1)— $\frac{1}{2}$ lb. beef suet (chopped); $\frac{1}{2}$ lb. of raisins; $\frac{1}{2}$ lb. of currants; $\frac{1}{2}$ lb. of sultanas; $\frac{1}{4}$ lb. mixed peel; $\frac{1}{4}$ lb. of bread crumbs; a little salt; $\frac{1}{4}$ lb. flour; 1 lemon; $\frac{1}{2}$ teaspoonful of allspice; $\frac{1}{2}$ lb. dark moist sugar; 4 eggs; $\frac{1}{4}$ pint of milk; 1 glass of brandy or whiskey; 2 ozs. almonds; $\frac{1}{2}$ a nutmeg. Chop the suet, stone the raisins, clean the currants and sultanas, chop the peel and slice the al-



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B. C. FRUIT AND FARM

monds. Mix the flour and suet in a basin, add salt, crumbs, currants, raisins, sultanas, sugar and peel; mix all well together, grate in half the rind of a lemon, half a nutmeg and add the almonds sliced; beat up the eggs, mix them with the milk and brandy; pour over all the dry ingredients; mix the pudding well, turn it into a greased pudding bowl tie a cloth over the top, put the pudding into boiling water and boil for five or six hours or longer. Four or five hours on the day the pudding is made and about two hours on the day it is to be eaten will be sufficient boiling, but longer boiling won't injure the pudding.

NOTE—Some people like the old-fashioned and very good method of boiling plum pudding in a cloth. Dip the pudding cloth in boiling water, shake flour over it, put the pudding in the centre and draw the cloth together and tie it firmly; boil as above. When using a pudding bowl, besides greasing it, it is a good plan to shake sugar inside the bowl, this gives the pudding a gloss. The Queen pudding boilers need no cloth.

IN THE VEGETABLE GARDEN.

Clean and fertilize the asparagus patch. If you have no asparagus, set some out now.

Transfer some parsley into window-boxes for winter use.

Start a rhubarb patch this month and mulch well with manure.

If you have plenty of asparagus and rhubarb, dig up some of the roots for forcing in the cellar. The heat of the furnace will do it.

Squashes and pumpkins keep longer with the stems on than they do without. The stems make good handles to carry them by, too.

A few parsnips for winter use may be lifted and stored in sand in the cellar; but, as freezing sweetens them, it is best to leave many of them outdoors for later use.

One of the best ways to keep carrots from withering in the cellar, is to put them in a box and cover them with sand. They will keep nice and fresh and come out plump and good.

Be sure your onions are perfectly dry when you store them away.

Store potatoes in bins one foot or eighteen inches deep, raised somewhat from the floor. Do not bruise or they will be likely to rot. Roots in the nature of salsify and horseradish, freezing does not hurt, so the main lot may stay out where grown; but some should be dug and put in earth in the cellar for winter use. A few heads of cabbage may be kept, heads down, in a barrel in the cellar.

Our way of storing celery is quite simple. We take a long, narrow box about as deep as the plants are tall, and set it in the cellar out of the way. Then scattering a couple of inches of fine soft earth in the bottom, we carefully pry the plants out with a bar, leaving as much soil in the roots as we can, and stand them up in the box close together. The roots ought to be well covered with earth. When the box is full we lay a piece of burlap or some old sacks on top, and the celery keeps well, and is good far beyond New Year's.

Clean up all cabbage stumps. They provide excellent shelter for cabbage worms.

It is a mistake to delay harvesting the winter cabbage crop until the outer leaves have been frozen hard several times and when there is danger of unbroken winter weather. Various methods of storing winter cabbage are used with good success.

The Danish Ball is the best keeper that can be grown. In large producing districts, frost-proof storage houses are designed and built especially for the purpose. Many growers store in barns or caves. Some pile or store the untripped heads in protected spots, as along fences, covering after severe weather begins with straw, corn-stalks, leaves or other coarse material. Burying is a favorite plan with some.

BEE-KEEPING.

Continued from page 773

Provide drinking water, so that bees will not resort to stagnant pools. Should the disease, now destroying the bees of Washington state, appear here, destroy the colony by fire at once.

STARTING THE INDUSTRY.

A successful apiarist advises orchardists who desire to start bee-keeping to procure from one to ten hives, and gradually increase the number as knowledge and experience are acquired. These colonies, in Langstroth hives, should be secured in October or November. They should be placed fronting east, as the morning sun would then induce the bees to start work early. The hives should be raised about 8 inches from the ground; this would ensure the absence of trouble with the bottom rotting. Top stories should be placed on the hives during the honey season. The brood chamber should not be interfered with when extracting was in progress. It is unwise to disturb bees frequently, especially during winter. A bright, warm day is the best on which to work. If comb honey is sought, whilst a little extra work is involved in preparing the supers, the trouble of extracting is done away with. Wax attacked by the bee moth should be burned. The chief source of honey is the gum; lucerne is a good nectar producing plant, and supplies are obtainable from many flowering shrubs.

EXHIBITION OF SOIL PRODUCTS.

The Western Canada Irrigation Association will hold their ninth annual exhibition at Bassano, Alta., November 23, 24 and 25, when an exhibition of soil products will be held, and cash prizes awarded.

The exhibition is open to any one who may wish to exhibit and our readers will be pleased to know that there is no entry fee, no charge for space, and that the C. P. R. has agreed to carry all bona fide exhibits to the exhibition FREE OF CHARGE.

Prize lists and entry forms may be obtained by writing to the Western Canada Irrigation Association, Box 1317, Calgary, Alta.

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WOMEN'S SECTION

British Columbia Women's Institutes

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THE SPECIAL OFFER TO WOMEN'S INSTITUTES.

The offer of the British Columbia Nurseries Co., Ltd., to make special rates to Women's Institutes on trees, shrubs, roses, etc., in order to assist the members of these valuable institutes in beautifying their homes and at the same time making a more beautiful country, appears in this issue.

Any effort to this end is to be commended and should receive the support of every Institute in the Province. We have always wished to encourage and assist the members of Institutes to make their homes and grounds more attractive, not only for the inmates but for the general public. We are in hearty sympathy with the object and wish it every success.

SHAWNIGAN LAKE.

At Shawnigan Women's Institute monthly meeting, Thursday, October 7, Mrs. Hanington spoke on the laws of the guardianship of children, of marriage, and of divorce. She dealt briefly also with the Married Women's Property Act, the Deserted Wife's Property Act, and other points concerned with a wife's or widow's position if the husband die intestate, or prove unfaithful.

COWICHAN WOMEN'S INSTITUTE.

Mrs. Hayward acknowledges the following sums for Red Cross work: A Lady, 50c; Mr. L. Knox, \$1.50; Anon, 40c; Anon \$1; Anon, 35c; Mr. D. Ford, \$5; Mr. J. Marshall, \$1; total \$9.75.

A case has been sent from the Institute Red Cross committee to Vancouver branch, C. R. C. S. It contained 336 bandages, 50 table napkins, 25 pairs socks, 50 property bags, 5 pillow cases, 2 feather pillows, 25 tray cloths, 50 handkerchiefs, 200 face cloths, 120 towels, 500 mouth wipes, 15 suits of pyjamas, 10 day shirts.

WEST SUMMERLAND WOMEN'S INSTITUTE.

The usual monthly meeting was held on Friday, October 8, when an interesting and profitable afternoon was spent. There was a good attendance.

Miss Dale gave an interesting address on "Preserving Meat," while Mrs. R. Cartwright spoke on "Curing and Smoking Meat, and Making Brine." Miss Spencer spoke on "The By-products of the Orchard," suggesting several ways in which women could add to their income. The members of the Institute are looking forward to a lecture on "Nursing" which they expect next month.

SALMON RIVER VALLEY.

The regular meeting of the Salmon River Valley Women's Institute was held on Thursday afternoon, October 14, at the home of Mrs. Scott. After the minutes had been read by the secretary, and adopted, the correspondence was then dealt with. A canning outfit circular was shown and it was suggested that the Institute should purchase one for the use of members. A paper was read by Mrs. W. F. Smith on "How our Institute may Benefit Rural Schools." Mrs. Thompson on opening the

debate which followed, spoke of the necessity for cheaper medical attendance in rural school districts, and of the advantage it would be to have a dentist visit country districts regularly. Mrs. Carson spoke of school methods in Scotland; a lively discussion followed. A vote of thanks was given Mrs. W. F. Smith for her paper, after which tea was served by the hostesses Mesdames Scott and Carson.

PEACHLAND.

The regular monthly meeting of the Woman's Institute was held on Tuesday afternoon, October 12, with a small attendance. Mrs. Buchanan and Mrs. Keating were appointed to get all the information possible about the knitting machine and report at the next meeting. Dr. Andrews' paper was found very interesting, containing as it did a fund of information along certain lines. Rev. A. Henderson being absent in Vernon, his paper was left over for another time.

There is considerable talk in town about organizing a Junior Ambulance League, and ways and means of providing the necessary funds the being discussed. For some time now, the Women's Institute has been giving sewing lessons in the school and so much of the Ambulance work is simple it would be a nice way for the young girls to show that "our boys" at the front are not forgotten by them.

ARROW LAKE.

On Thursday afternoon, October 14, the Women's Institute met. Mrs. Harvey Nicolla gave a demonstration on pastry cooking. Mrs. A. J. Harrison and Mrs. Thomas Grace acted as hostesses and served tea.

HARROP.

The Women's Institute met at Mrs. Ogilvie's home on Wednesday afternoon, October 13, when Mrs. Batley and Mrs. Wills were enrolled as members. Mrs. Porter read a paper on home dressing, and Mrs. C. W. Bourke gave a demonstration of waistcoat making. Mrs. Ogilvie served delicious refreshments. It was decided to hold a sale of home products at the close of the next meeting, November 10. The proceeds of this sale will be given in aid of the patriotic fund. The sale will begin at 4 o'clock.

Lectures were given on Thursday and Friday by Miss Fanny Steel, government lecturer. Miss Steel left on Friday for Crawford Bay.

COWICHAN WOMEN'S INSTITUTE.

The following report was read by Mrs. Hayward at the recent Island Institutes convention in Victoria.

During the past twelve months the members of the Cowichan Women's Institute have given their help to many good works.

On the outbreak of the war the need for patriotic aid was at once recognized. A large meeting was called in Duncan and at this meeting various plans were arranged.

Making of Jam.

The Women's Institute undertook the making of jam for the soldiers. Quantities of fruit were given by residents, the sugar and jars were provided, and two days a

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B. C. FRUIT AND FARM

week members met at the Institute and made the jam. Over one thousand pound weight of jam was made in the Institute rooms.

Belgian Relief.

The trouble of the Belgians was next taken up. Quantities of clothes were sent in to the rooms, and every Friday the members met, and cleaned patches and sorted the clothes. Nothing was allowed to go away torn or soiled. Numerous boxes were packed and sent to Victoria during the winter.

Friendly Help.

The war brought trouble financially to the district, and the Women's Institute came forward to help. A Friendly Help Society was formed and did much good locally. Food, clothing and money were given and distributed by a committee.

Christmas Hampers.

In October a most successful concert was organized and netted over \$187, and at Christmas thirty-three well-filled Christmas hampers were sent out and were most deeply appreciated. This good work still continues, each Wednesday food is distributed, also clothing, and daily milk, etc., is supplied to those in need.

Red Cross Work.

The Red Cross work was taken up by the Cowichan Women's Institute from the very start of the war, under the superintendence of Mrs. Hayward, and whenever a box of clothing was ready it was shipped to Vancouver, as that was the nearest Red Cross centre at the time.

The Institute has redoubled its efforts since the need has become so urgent, and every Wednesday school girls meet and on Fridays the older members meet to sew for the Red Cross, and many take home work and much has been done in this way. Box after box, well-filled, leaves the Institute rooms for the Vancouver depot.

Cookery Lessons.

Cookery lessons were much appreciated and well attended during the winter months, and a special tribute should be paid to Miss McKenzie for the very able manner in which she conducted the classes, and for her kindness and attention to her pupils, which made all so pleasant.

First Aid Classes.

First aid classes were held in October under the direction of one of the local doctors, Dr. Dykes, and were splendidly attended, numbers of certificates were gained after a strict examination.

Gardens and Library Work.

Lectures on gardening and library work were much enjoyed. Miss Stewart, of the Carnegie Library, being present at one meeting, and giving a most interesting lecture. Mr. Palmer, of the Department of Agriculture, also gave a most interesting lecture on gardening.

This is just a short review of the work done by the Cowichan Institute in the past twelve months.

CENTRAL PARK.

The regular monthly meeting of the Central Park Women's Institute was held October 21, in the Agricultural Hall with a good attendance of members present and the vice-president, Mrs. Reid, in the chair. It was decided to have a "Pound" day on October 30 when all members and those interested in the work were asked to donate a pound of "anything" for the Local Aid Association for the relief of the poor. These donations can be left at the East Collingwood Red Cross rooms. A shipment of clothes, fruit and provisions from up the

line is expected to arrive shortly and will be very valuable in alleviating the wants of the many poor and needy people in the community. Miss Summers gave a report of the Red Cross work accomplished during the last month. Seventy-six dollars had been raised for this purpose, \$50 of which had been secured in the Institute and about \$9 was the proceeds of the various teas. The balance was made up by numerous donations. The ladies have decided to hold a debate in the near future. The subject chosen is to be "Resolved, that the Central Park Women's Institute fulfils its purpose in this community." Much discussion has been going on regarding the hot lunches for school children of the district. It was decided to appoint two ladies to interview the council regarding this project. Mrs. J. B. Toderick and Mrs. F. W. Somers were accordingly appointed. After the regular business of the meeting the roll was called and each member responded by naming some of "The things we are to be thankful for." Many amusing responses were heard.

COWICHAN.

The usual monthly meeting of the Cowichan Women's Institute took place on Tuesday, October 12. After all routine business had been gone through a most interesting paper on "Gardening in Winter" was given by Mrs. Leather, a very well known horticulturist. A discussion took place and most valuable hints were given to amateur gardeners.

The results of the recent "Alphabetical Sale and Social" were most satisfactory, \$100.50 being obtained. Tea was served and the meeting adjourned.

Continued on next page.

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In order to assist and encourage the making of beautiful homes in our beautiful Province, we are prepared to offer to our Women's Institutes all the newest and best varieties of ROSES as well as FLOWER-ING SHRUBS, etc., at POPULAR PRICES.

We believe the humble home as well as the stately mansion should be surrounded with well-planted lawns and gardens. It adds distinction and elegance. In travelling through the country, one sometimes sees a fine house standing in an open field, and he naturally exclaims "What a beautiful house," but on passing a much smaller house, surrounded with lovely trees and shrubs, he just as naturally exclaims "What a beautiful Home." IT IS THE TREES AND SHRUBS THAT MAKE THE "HOUSE" INTO A HOME."

IF THE SECRETARY OF YOUR INSTITUTE will drop us a card we will at once forward copies of our General and Rose Catalogues with SPECIAL TERMS to Women's Institutes.

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Children's Corner

WHAT THE LITTLE SHOES SAID.

I saw two dusty little shoes
A-standing by the bed;
They suddenly began to talk,
And this is what they said:

"We're just as tired as we can be,
We've been 'most everywhere;
And now our little masters rest
It really is not fair.

"He's had his bath and sweetly sleeps
Twist sheets both cool and clean,
While we are left to stand outside;
Now, don't you think it mean?

"We've carried him from morn till night;
He's quite forgot, that's plain;
While here we watch, and wait, and wait
Till morning comes again.

"And then he'll tramp, and tramp, and tramp
The livelong summer day.
Now this is what we'd like to do—
Just carry him away.

"Where he could never go to bed,
But stay up all the night
Unwashed, and covered o'er with dust—
Indeed! 'twould serve him right."

POOR SMITH.

Richard Smith and John Jones were great friends. They were alike in many respects, but there was this difference between them—that Smith was an ardent churchman and was inclined to take things seriously, while Jones did not go to church very often and was inclined to take everything more lightly.

One day these two friends happened to be strolling along together, when the conversation drifted around to this difference between them. Smith had been telling Jones that his course was all wrong and that he ought to change his views and go to church, giving his reasons therefor. To this Jones listened attentively, and seemed much impressed.

"Your argument seems very logical," said Jones when Smith had paused; "but," with a twinkle in his eye, "there is one point you did not mention which has just occurred to me, and on which I should like a little enlightenment."

"What is it?" said Smith. "I'll be very glad to explain it if I can."

"It is this," replied Jones: "How does it happen that a man may be a church member and a heathen at the same time.

"I don't understand you," said Smith. "How can a man be a church member and a heathen at the same time? You are joking. You know he can't.

"But I say he can. Take yourself, for example. I will emphatically assert that I can prove in eight words that you are a heathen; and furthermore I can convince you of it."

"I know you can't do anything of the sort. You are trying to put up a bluff. And to make you back down I will agree to this: If you can prove in eight words or in eight hundred that I am a heathen, to my satisfaction, I will give you a pair of gloves; but if you do not prove it, you must give me a pair. I hate to take the gloves on such an easy proposition; but it will teach you a lesson."

"All right, it's a go," said Jones. Smith looked surprised. He really thought that Jones would back down. "Well, how do you intend to prove that I am a heathen?"

"Are you a woman?"

"No."

"You must be a he then."

Smith looked stupefied for an instant. Then he laughed. "Ha, ha, ha! That was a clever one. You have won the gloves all right, and have proved your contention to my satisfaction. But I will get it off on some one else. Ah, there is Roy Green! I will spring it on him."

So they joined Green, who, like Smith, was a churchman. Smith plunged immediately into the subject.

"Jones has just proved to me that a man can be a churchman and yet be a heathen."

"What absurd nonsense!" said Green. "It cannot be proved. Of course, a heathen may attend church; but it can't be proved that all churchmen are heathen."

"I thought so a few minutes ago myself," said Smith, excitedly. "And so sure am I of this that I will agree to give you a pair of gloves if I cannot prove to your satisfaction in eight words that they are heathen; but, if I do, you are to give me a pair."

"Done," said Green. "It will be almost like robbing you. But, if you are willing, I am."

"All right," said Smith.

"Proceed to prove it," said Green.

"The men aren't women," said Smith.

"No," said Green.

"Then they are hes. Ha, ha!"

"But that doesn't prove them heathen." Smith looked dazed. "I guess I made a mistake."

Green chuckled. "I guess you did. Fork over those gloves!"

And Smith had to buy two pairs.

Smith went home chagrined, thinking where he had made his mistake. By and by it came to him. It would go better to prove that he was a heathen as Jones had proved it to him that way. He would get back those gloves yet.

The next day he met Brown. "Now is my opportunity!" he thought, and accosted Brown.

"Brown," he said, "I heard a clever one the other day, and that is how a man can be a churchman and a heathen at the same time. You know that I am a churchman. But did you know that I can prove that I am a heathen?"

Brown chuckled. "You don't have to prove it to me," said he. "I am perfectly willing to concede it."

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CRANBROOK.

Miss Stead of the Department of Agriculture at Victoria, has spent a few days in the city, delivering lectures on nursing and first aid work to the Women's Institute. Miss Stead reports having found the Women's Institute to be flourishing, with a membership of nearly 100. She states that, although a good deal can be accomplished in the larger town, it is really the aim of the government to deliver these lectures to people in the rural districts who do not have a doctor whom they can call at a moment's notice.

MAPLE RIDGE.

Through the efforts of Mrs. Geo. Abernethy, a Women's Institute will shortly be formed at Port Haney. Already more names

are on the list for membership than the required number. Mrs. W. A. Robertson is secretary for the present, and Mrs. Alec. Stevenson is president pro. tem. Mrs. Davies, of Chilliwack, is expected shortly to formally organize the institute.

TYNEHEAD NEWS.

The monthly meeting of the Women's Institute was held at the home of the president, Mrs. Bothwell. There were nine members present, and one visitor. The usual amount of business was done, letters read and disposed of, and nine pairs of socks were handed in. The secretary was asked to hold them till all the socks were ready, when they would be dispatched all at once.

There was some talk of a patriotic concert, particulars of which will be given later. The institute decided to make application for the travelling library, which will be greatly appreciated in the long winter evenings, by all the members. Dainty refreshments were served at the close, and the meeting adjourned to meet in November at the home of Mrs. J. Drinkwater.

CONTRIBUTIONS.

The Royal Columbian Hospital acknowledges receipt of the following contributions. Six quart jars of fruit from the Upper Sumas Women's Institute; five bags and four boxes of fruit and vegetables from the Port Langley Women's Institute; fourteen sacks and four boxes of fruit and vegetables, Hatzic Women's Institute; nine jars of fruit and vegetables, Burquitlam Women's Institute; thirty-seven jars of fruit, Surrey Women's Institute.

CRANBROOK.

A very interesting meeting took place in the Maple Hall Tuesday afternoon, October 5th, under the auspices of the Women's Institute. After the ordinary business had been disposed of Mrs. R. W. Russell read a most interesting essay on "The Origin of Thanksgiving Day" and "What We Have to Be Thankful For," dwelling especially on themselves as Institute members and the motto "For Home and Country." Mrs. Binning gave an illustration on the correct method of setting a dinner table as taught by Miss Goldie, the teacher of domestic science at the provincial college of agriculture at Olds, Alberta. This was followed by Miss Kimpton, giving a "Thanksgiving Dinner" menu, and discussions arose on the various dishes connected with the same and their recipes.

NELSON

The regular monthly meeting of the Nelson and District Women's Institute, held on Saturday, was preceded by a luncheon given in honor of the Willow Point Institute members and was attended by 70 members, 13 of whom had been enrolled since the last meeting. After the luncheon the members and their guests adjourned to the Knights of Pythias hall, where the regular business of the meeting was taken up. The report of the secretary-treasurer showed that as the result of the sale of refreshments at the institute's booth in the exhibition building at the fall fair, a net profit had been made of \$142.20, which it was decided to devote to the Red Cross Patriotic fund work. The report also stated that \$26.45 was received from the raffle of the mats donated by Mrs. I. L. Walker, Mrs. G. A. Hunter holding the lucky number.