

BRITISH COLUMBIA
FRUIT AND FARM
MAGAZINE

Vol. VIII., No. 6

JUNE, 1916



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BRITISH COLUMBIA Fruit and Farm Magazine

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

Vol. VIII.—No. 6

Vancouver, British Columbia

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Pure Milk Problem

Report of Annual Meeting of Pacific North-west Association of Dairy and Milk Inspectors.

The fourth annual meeting of the Pacific Northwest Association of Dairy and Milk Inspectors, one of the most important meetings of its kind ever held in British Columbia, took place in Vancouver on May 12 and 13 with prominent dairymen from all over the coast in attendance. Prof. W. T. McDonald, live stock commissioner of the province, who assisted in the organization of the association at Seattle four years ago, presided and the proceedings were most interesting and instructive.

The object of the association is to develop efficient and uniform inspection of dairy farms, milk establishments, milk and milk products and to place the inspection of the same in the hands of persons who have a thorough knowledge of the dairy industry.

The officials for the ensuing year are: President, Mr. G. S. Henderson, Everett; first vice-president, Dr. J. B. Anderson, Spokane; second vice-president, Professor W. T. McDonald, Victoria, and secretary-treasurer, Mr. A. N. Henderson, Seattle, Wash.

The next convention will be held in Tacoma.

Testing for Tuberculosis.

Tuberculine tests of cattle, as a means of eradicating the dread disease from animals, was an important topic of discussion at the convention, and although all the delegates were imbued with the necessity of these tests, there were some who deemed that pasteurization of milk was a safeguard to the consumer, and might be adopted until farmers willingly co-operated with health authorities in the improvement of their herds.

The subject was opened with a paper by Dr. Button, commissioner of health, Tacoma, who spoke of "The Eradication of Bovine Tuberculosis in the Tacoma Milk Supply." He traced the steps that had been taken in recent years by the health officials, supported by enactments of the state and civic authorities. It was a matter that had to be handled with great diplomacy. People who telephoned the department were told where they could buy milk from tested cows and the malcontents would soon fall in line. It had been necessary to provide for compensation owing to the large number of animals that had been condemned. When retests were made the percentage of reactors always showed a considerable reduction.

When asked if the tuberculine test was a more efficient safeguard to the consumer than the pasteurization of milk the speaker replied that that was a large question, but he believed that pasteurization would be the solution of the problem.

In the course of his paper the speaker also asserted that two tests had been made,

one being the subcutaneous test and the other the interdermal, the latter being adopted because some farmers had hit on "plugging" their cows to prevent them reacting to the former method.

Dr. Henderson remarked that every health officer ought to have a private purgatory of his own in which to place all who would try to render cattle immune from the tuberculine test. Pasteurization of milk did not take the full place of eradication of the disease, which certainly would be eradicated if the proper methods were adopted. A cow should have plenty of fresh air, the sheds should be whitewashed and opened to the winds, and cows should be kept off low, damp ground, but many men, with a few dollars would come into the towns and would want the privileges of the country with the prerogatives of the city. Although there was not very much danger of adults being infected with tuberculosis through milk, there was a very potential danger to infant life. The problem was an economic as well as a disease one.

Supplying Pure Milk.

The problem of supplying milk that would meet the test of the low bacterial content of 4,000 to the cubic centimetre was discussed by Mr. Robb. A practical dairyman with a successful record, Mr. Robb had merely to cite the methods in vogue at his own establishment. These included a scrupulous observance of cleanliness at all stages. Elaborate precautions were even taken in the grooming of the herd, and in this connection the speaker mentioned a wheeled apparatus, fitted with disinfectant spray, and tanks, for washing the udder of each animal before milking. Dusty fodder was not given and each dairy hand kept a special coverall suit and cap for milking time. The result was a minimum of bacterial contamination. Speaking on the question of milking machines, in place of Mr. Shannon who was unable to appear, Mr. Robb stated that his experience had shown no diminution in yield, or unfavorable outcome, but he had found hand-milking in the tests carried out at his farm to yield a product with a slightly lower bacterial content. He had tried, however, only one make of machine.

Discussion arising as to the value of chlorine compounds, such as chloride of lime, for dairy purposes, Mr. Ayres of the United States department of Washington, D. C., advocated the use of steam for sterilizing utensils, and recommended a small portable stove that could be secured at a cost of about \$8, for the purpose.

Mr. G. S. Henderson, civic milk inspector for Everett, indicated the co-operation that had to be effected between dairymen and vendors and the inspector, in order to meet

the serious question of how to arrest the noticeable falling off in the consumption of milk. The publicity given to the question of the milk supply had reacted unfavorably, as far as the dairymen were concerned for now the best possible care was exercised the consumption had fallen off. The inspector should be able to allay any apprehension in the public mind, and show the advantage of milk as food, while the dairymen had to give their loyal co-operation in carrying out the regulations laid down.

"The Value of the Milk Dealers' Bacteriological Laboratory in Improving Milk Quality and Economic Handling of Milk," the subject selected by Mr. Petticlerc of Seattle, who dealt with the importance of this work in educating the milk vendors' men as to the dire results that followed negligence in marketing milk. The laboratory might also be a centre of public interest demonstrating to the consumer the care that was exercised in safeguarding the public health.

Dr. Wesbrook, president of the British Columbia University, discussed the question of "Milk and its Relation to Public Health." Enumerating the special provinces of medical and veterinary science, biological research and chemical analysis, all contributory to the matter at issue, Dr. Wesbrook said that the main difficulty was to keep all these branches of specialization so far as they bore on the question at issue, co-ordinated and in working co-operation. Speaking as a practical investigator, he deprecated the commonly prevailing fear that disease could be carried to human beings through the system of the animal. It was true, that in the case of tuberculosis the views of Koch no longer held good, and that there was a distinct relation between human and bovine tubercular disease, but there could be no such conveying of the germs of typhoid and diphtheria. Such contagious and infectious diseases came through the individual handling of milk, there were sporadic cases of typhoid or diphtheria carriers being engaged in this work and so endangering the community or by means of the washing of utensils with tainted water, or by the adulteration of the milk itself by infected water. He had come across a rare case in which rabies virus could have been conveyed through systematic channels and there was the classic instance of the epidemic of Malta fever through the drinking of goat's milk from infected animals, but these were pathological curiosities.

It was advisable that milk should be scrupulously treated at every stage, instead of being pasteurized, for the present obscurity as to the function of the vitamins in the matter of growth and the part they played in the action of enzymes made it impossible to forecast just what the result

or the use of sterilized milk as food might exert upon the human frame over a period of years.

Pasteurization of Milk.

The pasteurization of milk was fully considered by Dr. Ayres, bacteriologist for the United States in connection with the dairy department at Washington, D. C. Describing the three methods classed under that title, each varying in the degree of temperature to which the milk is subjected and the time exposed to heat, he described the advantage of a new system, that of carrying out the process with the milk in the bottle, which is therefore not exposed to any source of contamination until it is opened by the consumer. With special protecting caps and steam sterilized bottles, the system is easy of adoption. The value of pasteurization consists in the destruction of the pathogenic bacteria, such as germs of typhoid, and the virus of the foot and mouth disease, which are rendered innocuous at the temperature of 145 degrees Fahrenheit, and the retention of that temperature for a period of 30 minutes or so, the persistent lactic acid bacilli that induce souring and the peptonides that set up putrefaction being also destroyed. Chemically there is little or no change observable and apparently no impairment of nutritive value or digestibility. The cost attendant on the process, about three-tenths of a cent a gallon, is easily offset by the saving in milk otherwise lost through souring.

Asked by several inquirers as to the contention that pasteurized milk tends to produce scurvy in infants fed on it, Dr. Ayres said he was aware of no conclusive evidence that would point to such a view. In France no such result had been observed and there the system was almost universally employed. He was not prepared to say, either, that the addition of orange juice as advocated by some would prevent any such deleterious effect. At the very high temperature of the "flash" process, there might be a tendency to the deposition of calcium salts and the coagulation of part of the albumen that might impair the nutritive value of the product, but this might be obviated by the other methods. No system of inspection and care, he thought, could give the certainty of the pasteurizing process.

Pasteurization Not Cooking Process.

Speaking on pasteurization, Mr. Frank Flood, manager of the Broadview Dairy, Spokane, Wash., said that the day had gone by in which the prevailing idea was that pasteurization was "a cooking process for the preservation of dirty milk, improperly handled." The best quality of milk obtainable was used, and the safeguard that pasteurization offered to the dangers of infection that might arise from the use of raw milk left no choice between the two. Pasteurization was, he thought, absolutely necessary to remove such germs as those of typhoid, scarlet fever, and the streptococci that caused septic sore throat, which might have found their way into the milk.

The value of milk contests to improve the grade of the daily supply was fully entered into by Mr. Dey, whose observation has confirmed him in the conviction that the practice has a most favorable effect. These competitions should, however, be based on the results of the test samples, taken at random from the every day supply and not from expressly prepared sources. Otherwise, unscrupulous vendors might use their competitive standing unfairly as an index to the quality they supplied in daily practice.

Mr. Mess, who is largely responsible for the excellent legislation regarding bovine tuberculosis in the state from which he hails, bespoke the support of the govern-

ment inspectors and others in the effort the agriculturists intend making to avert the passing of the proposed enactment to render insurance of dairy employees compulsory. Dairying, he averred, could not at all be classed as a hazardous occupation. He also made commendatory allusion to the value of the legislation barring out cattle suspected of being diseased.

"Better Milk Day."

Advertising and publicity from the milk dealers standpoint was thoroughly outlined by L. O. Lukan, manager of the pure food section of the Post Intelligencer of Seattle. In the course of his remarks, Mr. Lukan emphasized the fact that his visit to the convention indicated that the milk dealers were beginning to see the value of newspaper advertising suggested as a medium for increasing the consumption of milk and suggested that to properly launch a campaign of this character a certain day should be set aside to be known as "Better Milk Day." On this day every inhabitant of the Northwest should be urged to drink one quart of milk. be carried out.

A. N. Henderson of the Seattle health department and secretary of the convention, proposed that the health departments in all of the Coast cities co-operate on "Better Milk Day" and secure the help of the prominent officials as well as the churches, schools and the merchants.

The president appointed the following committee to have the Pacific Coast "Milk Day" in charge.

Professor McDonald also announced that, in accordance with the wishes of the association, he had appointed the following members of the milk-day committee, whose duty it would be to "boost" the consumption of milk: Messrs. A. N. Henderson, Seattle, chairman; Orton, Sumner; Dr. D. W. Mack, Portland; A. M. Work, Portland; Dr. J. B. Anderson, Spokane; F. Flood, Spokane; Professor W. T. McDonald, Victoria; F. W. Clark, Vancouver; J. E. Dorman, Salt Lake City; T. A. Wiancko, Victoria; J. C. Burnam, Seattle; Bert. Walker, Tacoma; Dr. Batton, Tacoma; C. Palmer, Seattle, and L. van Paten, Enumclaw.

OKANAGAN FRUIT GROWERS HAD SUCCESSFUL YEAR

The annual report of the Okanagan United Growers, shows that on a capital of \$26.00 this organization began business three years ago and last year handled 1536 cars of fruit and vegetables, approximately one half of the production of the Okanagan valley. This is a substantial increase over the amount handled in 1913 and 1914.

In connection with this volume of production no less than 89 carloads of box material were used, one carload of nails, three carloads of sacks, three carloads of packing paper and five carloads of spray. During the year the organization established agencies in various prairie points, instead of selling through brokerage houses as heretofore, with a consequent saving to its members, and a noticeable increase in efficiency. Another year it is hoped to push the turnover to more than two thousand carloads and the total scales to well over the million mark.

Among the fruits handled were more than 300,000 boxes of apples, 30,000 crates of apricots, 14,000 crates of cherries, 35,000 boxes of crab apples, 8,000 boxes of prunes and plums and 45,000 boxes of peaches. With vegetables the turnover was also very large. Cabbage handled totalled 360,000 pounds, beets 50,000 pounds, celery 135,000 pounds, onions 5,100,000 pounds, potatoes 4,000,000 pounds, tomatoes 267,000 pounds, and large quantities of other vegetables.



Synopsis of Coal Mining Regulations

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

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

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

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

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

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

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

W. W. CORY,

Deputy Minister of the Interior.

N.B.—Unauthorized publication of this advertisement will not be paid for.—83575.

More than 1,000 tons of hay was also handled.

In addition the organization retailed to its members and the various local unions affiliated with it, not less than 64 carloads of flour, feed, seed, etc.

Although the organization is now three years old their capital is still \$26.00, and they have more than \$20,000 in the bank in reserve. This reserve has been created by holding back a certain proportion of the sales made. Three per cent will be the amount for 1916 and after that it is expected the amount will be two per cent.

Why Do We Spray

By R. C. TREHERNE,

Field Officer Entomological Branch, Dominion
Dept. of Agriculture.

Fruitgrowers and farmers of the province of British Columbia, in general, have not learned to adopt the system of spraying fruit-bearing trees and bushes as part of their regular orchard practice. Sufficient literature, bearing on the subject of spraying fruit trees, is in circulation among the growers in the province and sufficient information has been offered through the medium of lectures and institute meetings. Further than this, certain demonstrations in the use of power and hand spray outfits have been carried on in various parts of the province, for several years, to indicate the value of this form of pest control.

Obviously, therefore, the growers in general have not appreciated the wisdom or the advisability of this important orchard operation. In other words, they have not been shown the "dollars and cents" side of the situation whereby they are enabled to increase the profits from a given acreage of fruit-bearing plants. There are some growers, however, who consider they have only to spray to obtain perfect fruit, and neglect cultivation in consequence. This is an extreme view to that held by the grower who sees no virtue in spraying at all. But aside from these two views it ought to be clear to all that if increased profits from spraying could be shown and demonstrated satisfactorily the principal would be in force on every farm and garden, where fruitgrowing is engaged in as a means of profit. It is the object of this short article to briefly outline and to show the "sense and reason" for the advice, generally offered, that spraying is advisable, as an answer to the title of this paper.

Spraying therefore:

- (1) Assists in restoring the balance of nature.
- (2) Acts as a preventive and as a form of plant insurance.
- (3) Checks or destroys pests; fungus or insect, thus improving the quality of the fruit.
- (4) Increases the growth and productivity of individual plants, thus improving the quality of the fruit.
- (5) Produces evenness in the size of the fruit, thus curtailing the labor of sorting and handling.
- (6) Has been found the most economical way of accomplishing the foregoing.

Restores the Balance of Nature.

The first point to understand is the meaning of the term "balance of nature." By "balance of nature" is meant the harmony that pervades all nature and governs the inter-relation between plants and animals. All insects are not "pests" in the sense that we usually understand the term, in fact under strictly natural conditions they are frequently beneficial. Take for instance a plant which produces an excessive number of seeds such as some of our common weeds. If all the seeds produced by this plant germinated and produced growth, which in turn produced seed, it would not be long before the whole countryside would be covered by this particular plant, to the detriment of others. Nature to offset the possibility of the ascendancy of any one particular species, provides certain insects, fungi and sundry natural causes to effect control. This control may take the form of many of the seeds being actually devoured by a small insect, in which case the seeds that are left untouched receive more vitality and respond

to the increase in quantity of the plant juices. Stronger and more robust plants are thus produced by a form of natural selection to the obvious benefit of the species. In turn the small insect which devoured the seeds of this plant may be controlled and its number be held within bounds by another but smaller insect which is referred to as a "parasite." The parasite, in turn, again, may be held in check by other insects or bacteria, and so on up and down the scale of nature. This perfect harmony of all things under natural conditions explains the term "balance of nature."

unsprayed and uncared for orchard does not produce as good fruit as properly tended orchards. The negligent grower who propounded this form of argument in the first place would not be satisfied by the statement that his observations are incorrect and that his remarks are not supported by actual fact. He requires a more definite reply. It is to be hoped therefore that the few remarks that follow will assist in clearing this difficult point.

Is a Plant Insurance.

In connection with the control of plant diseases, fungous or bacterial in origin, it



Prideham Orchard, Kelowna.

Man by his action of clearing the land, by his cultivation of one or more particular crops and by his practice of transporting products from one country to another, has upset the "balance" and, as we know to our sorrow, has developed "pests" which exact toll from his endeavors. In our work as department officials endeavoring to assist the fruitgrower or farmer we are frequently met with two favorite types of argument. The "old timer" will say "We never had so many pests in our day nor so many insects to fight," and then the negligent grower will step forward and remark "Yes, and so and so, who has never pruned, sprayed, or cultivated his orchard, produces excellent fruit and gets good crops, with little or no trouble. How do you account for that?"

The answer to the former is fully explained by what has been said in regard to the upset in the balance of nature and such is liable to increase rather than decrease owing to the fact that yearly the cultivated area is enlarged and transportation facilities improve.

The answer to the latter is not so readily shown, and it is obviously this misunderstanding that checks the general use of the method of spraying. It is not sufficient, to prove the point, to merely state that the

must be remembered that when a canker is seen on a branch or stem or when a dead brown area or black spot is observed on leaf or fruit, it is usually the final stage of the disease. Spraying to effect a remedy then is useless and unwise. All spraying for such plant diseases must be preventive in nature. One sprays to prevent disease and this fact cannot be contraverted. It is better to employ a doctor than an undertaker in a case such as this. The same is true with regard to attacks by insects. Nine times out of ten the severity of an insect attack will be curtailed by judicious early spraying before that insect has attained size and development. It is unfortunately too often the case that the grower is not sufficiently well acquainted with the stages of development in an insect's life, hence does not realize that injury is being done until, very often, too late or until it costs twice as much to effect control. To offset this state of ignorance it is far wiser to spray for safety's sake. It has been claimed that it is not wise to spray unless you have something to spray for. This is true and eminently wise in fact, as no one wishes to spend more money than necessary in the production of a crop. But as a contra-argument we are fairly safe in claiming that

there are no orchards in the older settled sections of this province that are free from insect or fungous attack, separately or combined, that would not find spray application advantageous to a lesser or greater degree. This statement, combined with the fact that we are able to use mixed insect and fungous sprays at the one time, argues clearly in favor of a system of spraying, be it limited or extensive, as a preventive or as a form of plant insurance.

Improves Quality of Fruit.

The orchardist who sprays regularly and efficiently does not need to be told that the quality of fruit from sprayed trees is better than fruit from unsprayed trees. The fact is self evident in orchard sections where serious pests prevail. To the doubter we would say "try it and see, if you do not take our word for it." But in this we run up against the greatest setback spraying experiences. Doubtless numerous individuals have attempted to solve the question themselves and the dissatisfied claim "no results." Inquiries usually elicit the information that the spray was put on at the wrong time of year or was not followed up by a second or third spraying at the right periods. Either these or a wrong kind of spray was used or else the right kind was not put on with sufficient force nor in sufficient quantity. The basic reason underlying the failure to adopt the best methods is obviously ignorance as to why the spraying was done and the effect of the spray on the pest to be attacked. Whose fault, therefore, is it that this ignorance prevails? Volumes have been written on the reasons "why and how" and lecturers have shown the points at issue, and demonstrations have proved them. It is obvious, therefore, that the blame lies in the orchardist who has not learnt the virtues of judicious spraying and the remedy lies in his hands entirely. It would be possible to give numerous quotations and results from facts obtained under experiment both in Canada and the United States, but such is not necessary. I will merely give an extract from Circular No. 7 of the Entomological Branch, Dominion Department Agriculture, 1916, to cover this point. (A copy of this circular may be obtained on application to Ottawa).

Number sprays applied in season to apples.	Percentage of apples packed.	Profit per barrel over cost of spraying and re-treatment of best unsprayed lot.
5 (Average)	65% (Average)	45 cents
4	48%	26 cents
3	34%	11 cents
2	21%	0 cents
1	22%	0 cents
0	13%	0 cents

From this table, therefore, it ought to be clear that the value of spraying is undoubted. The column showing profits from spraying represents the "net profit, after sale, even after deducting the cost of application, which naturally is greater in the five applications than in the two applications.

Increases Quantity of Fruit.

Few people realize that one of the most important results from a regular system of spray application is an increase in the quantity of fruit produced. It may readily be seen, theoretically at any rate, that provided the whole force of a tree is expended in the production of bloom, leaf and twig and no energy is required to fight insect or fungous attack, the general vitality of the tree will increase. This can be shown practically if the yield record of an orchard is kept, and can be proved to a grower's own satisfaction if he sprays properly following a period of neglect. The follow-

ing example is taken from Circular No. 7, as previously mentioned, although many records can be taken to show the point at issue:

Year	NONPAREILS		GRAVENSTEINS	
	Actual Crop Unsprayed	Obtained Sprayed	Actual Crop Unsprayed	Obtained Sprayed
1912	64.50	69.5	13	99.50
1913	41.00	309.0	0	110.75
1914	76.75	167.5	19	344.50

From this it can be readily seen that the yield record is noticeably increased when annual sprays are applied. It will be observed further that the results are more often apparent in the second season than during the season the spray was applied. This is proof of the contention that during 1912 the fruit had a chance to produce more fruit buds which set for the following year. It is not to be inferred, however, spraying has a regular effect in producing fruit buds in a tree which may be healthy in all respects, but the table illustrates what may be done with a neglected tree which, is capable of producing crop but has suffered by reason of neglect.

Curtails Labor of Handling.

Following on directly from what has been said one may readily infer that the fruit produced on a sprayed, thinned and cultivated tree is more even in size and freer from blemish. This being the case the labor of sorting and handling into sizes and grades is greatly curtailed and simplified. As grading and sorting is an essential item in the production of commercial apples and as the expense has to be incurred, it may be lessened greatly by an evenness of the product. This may be accomplished or greatly assisted by judicious spraying.

Most Economical Method.

From these few remarks it can be seen that results of virtue may be obtained by careful and applied sprays. In fact in face of the records to be obtained no orchardist can afford to omit a spray application in his orchard. If it only costs five cents per box of fruit produced to effect an even grade, freedom from disease and an increase in the following year's cropping, surely it would be five cents well invested.

Although it is not the purpose of this article it can be readily shown that the natural agencies which normally control insects and disease, are entirely too few and spasmodic in appearance to be considered from a practical standpoint. It is obvious, if this statement were extended, that an orchardist is bound to utilize unnatural methods to hold his orchard troubles in check and no other method can be advised than spraying by well recognized and fully tested insecticides and fungicides. The department of agriculture stands ready at all times to assist the growers in the matter of advice as to what mixtures to use, and many excellent and power spray machines are on the market for purchase. Possibly in some later number of the Fruit and Farm Magazine some statements on the cost of equipment and practice of spraying will be found, as a further guide and reference to the orchardist.

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.
213 Hastings St. East, Vancouver, B. C.
J. E. HUGHES, Manager.

The
Vernon Fruit Company, Ltd.

1908 : : 1916

The old reliable Company that has always made good.

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SHIPPER
AND
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Eight Years of Successful Marketing

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

Uniform Fruit Packages

By A. H. Flack,
Chief Fruit Inspector, Prairie Provinces.

The apple box has frequently been discussed and no decision has ever been reached in regard to it. We have for domestic purposes two sizes to select from, both of which are in use in British Columbia today. One is the box specified for export in the Inspection and Sales Act, Section 325, which has inside dimensions of 10x11x20 inches, containing 2200 cubic inches, while the other is the Oregon box with inside dimensions of 10½x11½x18 inches, cubic contents being 2173½ cubic inches. As far as the adaptability of these packages for apples is concerned I do not believe there is very much difference. If anything the Oregon box has the advantage. The chief argument in favor of the Oregon box, to my idea, is that the length is identical with the pear and peach box. This is really a very important point, as it enables mills to produce cheaper by utilizing material for other packages that otherwise would be wasted, and is certainly an advantage in warehousing shock and loading mixed cars. It could also be of convenience to the trade in warehousing at distributing points.

Some objections may be raised due to the fact that our Australian markets require a different package. It is unfortunate that such is the case, but, nevertheless, I am of the opinion that it will be to our advantage to adopt the Oregon box for domestic purposes.

In regard to apple crates it is quite obvious that some steps should be taken in order to have only one size in use. Undoubtedly several ideas exist as to what constitutes the best package for this purpose. I would suggest for your consideration that the apple crate is of the same dimensions as the apple box, if for no other reason than to endeavor to have as many of our packages as possible of a uniform length.

In regard to the peach box we have one in use in British Columbia measuring 11x18 inches inside, and another measuring 11½x18 inches. I think it would be advisable to agree as to which of these two packages to adopt. It will, of course, be necessary to have several different depths and I would suggest 3½ inches, 4 inches, and 4½ inches. In regard to the width, 11½ inches would be the same as the apple and pear box suggested, with the accompanying advantage.

Regarding the pear box, I would suggest the one measuring 11½ inches wide, 8½ inches deep and 18 inches length inside. This would give us a package of the same length and width as the apple and peach box suggested. In view of the fact that a lug package is now being used for some markets, it would, I consider, be desirable to standardize one. Various packages have been used for this purpose, but the results of my observations would favor the Pacific lug, as used by the Pacific Fruit and Produce Company. This package is used largely for cherries and is shipped containing 2 pounds nett by weight. It measures 14 inches in width, 5½ inches deep and 16¼ inches in length, having a hand gouge on each end, with a cleat 14x1½x½ inches under the cover which permits a free circulation of air.

In considering the deep pint hallock, the packer, I believe, should receive the first consideration in determining the specifications. It seems to me that the hallock measuring 4¾x4¾x1¾ would be a trifle

shallow to accommodate two layers of large berries, and the size used in Hood River, Kennewick, etc., 4¼x4¼x1¾ might be more suitable.

In regard to the 4 basket crate, I am of the opinion that the tintop should be standardized. The one in general use in British Columbia measuring 7½x7½ inches at top, 6½x6½ inches at bottom and 3¾ inches in depth. Some are being made 7½x7½ inches at top, 6½x6½ at bottom, and 3¾ inches crate 4¼ inches deep, which is ¼ inch deeper than the one in general use in British Columbia. Washington has at least two sizes in use, one measuring 8x8 inches at top, 6½x6½ inches at bottom and 3½ inches in depth, while the other, which to my idea is to be commended, measures 7¾x7¾ inches at top, 6½x6½ inches at bottom and 3¾ inches deep. This package, I believe, will assist us in overcoming the slack plum pack often in evidence from British Columbia.

The cantaloupe crate needs attention, and the package that is apparently best suited for this purpose is 11½ inches in width, 11½ inches deep and 20½ inches in length, inside measurement.

Assuming that our packages have been standardized, there are other matters regarding packages that require our attention. Some markets require fruit in different packages to others. In this connection I have interviewed the wholesale trade of the prairie provinces during the past season and have prepared a list of each distributing centre with the packages for the various kinds of fruit preferred, and I believe it would be to our advantage to study the markets and endeavor as far as possible, to meet their requirements in this connection.

Regarding sweet cherries, Winnipeg requires them packed in the 24 deep pint crate, Brandon in the 4 basket crate and 24 deep pint crate. Regina has a limited demand for the 24 pint, moving the bulk of the cherries in the 4 basket crate. Moose Jaw favors the 24 pint with some lugs. Lethbridge, Medicine Hat, Calgary and Edmonton desire the lug. Lethbridge, in addition, can handle to advantage the 4 basket. Saskatoon preferring the 24 pint crate. Generally speaking the ten-pound flat is a dead issue as soon as the heavy cherry movement is on, and, as our competitors' cherries are on the market before ours there is not much demand for the flats by the time our cherries arrive.

In regard to sour cherries, Winnipeg and Brandon prefer the 6-quart basket. Regina can handle both in the 6-quart and 4 basket crate, Moose Jaw, Lethbridge, Medicine Hat, Calgary and Edmonton prefer the 4 basket crate, while Saskatoon can use the 4 basket but prefers 6 quarts.

All our centres prefer the 24 deep pint for strawberries and the 24 shallow for raspberries.

The 24 pint crate is also preferred for all berries and currants.

Plums are in favor in the 4 basket crate, the peach box being very unpopular, while prunes are desired in the 3½ inches peach box. Apricots are required in the 4 baskets only. The 4 basket crate is proving very popular for tomatoes, Brandon and Moose Jaw being the only points that have spoken at all favorably of the peach box.

I believe that by giving our markets consideration along the lines suggested, by endeavoring as much as possible to supply them with fruit packed in the packages they prefer, will assist in increasing the demand for our produce. Our competitors study this matter and have, on various occasions, obtained an advantage over us by



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this method, and it appears to me, particularly at this time when competition is so keen, and with rapidly increasing tonnage, which necessitates you securing every available outlet, that these matters merit your consideration.

Kamloops Irrigation Convention

With a splendid list of speakers to address the 10th Annual Convention of the Western Canada Irrigation Association at Kamloops on July 25, 26, and 27 next, "The Place in the Sun" has every reason to feel confident that the forthcoming meeting will be one of real value and interest to both fruit growers and farmers.

Farmers and fruit growers are usually very busy men and do not care to take time from the midst of their work, particularly during the crop-growing season, to absent themselves from their homes unless in doing so they are getting information and

basis and the Western Canada Irrigation Association has not been behind hand in this work. Every possible phase of agriculture, in which the farmers in British Columbia and the prairies are interested, has a place on the programme and if through any oversight or lack of time, a subject of special interest to a particular farmer has been overlooked, the meeting is open to discussion on that subject. As far as possible the actual farmers, irrigators and fruit growers themselves are to make these addresses which will be much more practical than theoretical, and it is hoped and believed through the increased attendance of delegates at the Annual Irrigation Conventions, that the members are realizing the value of the Association to them and getting direct benefits from and

to answer all enquiries regarding this meeting, promptly and fully.

The following is the tentative programme of speakers for the Convention:

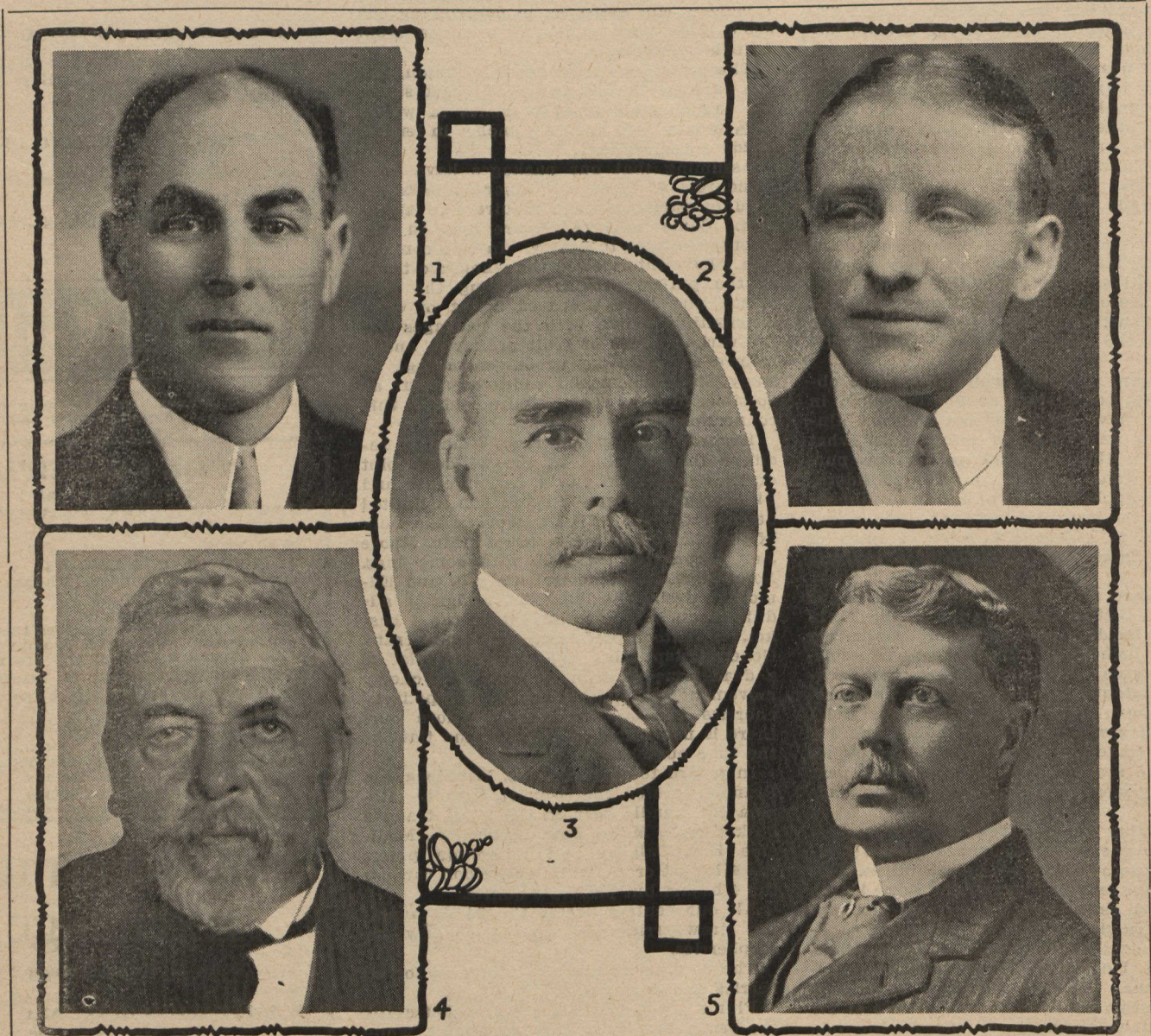
Dr. F. F. Westbrook, President, British Columbia University, Vancouver, B. C., "Agricultural Education in British Columbia."

P. H. Moore, Superintendent, Dominion Experimental Farm, Agassiz, B. C., "Grading up a Dairy Herd."

E. A. Howes, Dean, Faculty of Agriculture, University of Alberta, Edmonton, "Agricultural Education in Alberta."

W. H. Fairfield, Superintendent, Dominion Experimental Farm, Lethbridge, Alta., "Growing Winter Feed under Irrigation."

Don H. Bark, Chief of Irrigation Inves-



Some prominent speakers who will deliver addresses at the Kamloops Convention. No. 1—Mr. S. G. Porter, Irrigation Branch, Department of Interior, Calgary. No. 2—Mr. F. H. Peters, Commissiонер of Irrigation Department of the Interior, Calgary. No. 3—Mr. J. S. Dennis, assistant to the President Canadian Pacific Railway, Calgary. No. 4—Wm. Pearce, of Calgary, one of the original founders of the Western Canada Irrigation Association. No. 5—Dr. J. G. Rutherford, C. M.G., Superintendent of Agriculture and Animal Industry Canadian Pacific Railway, Calgary.

advice that make their visits to farmers' conventions of intrinsic value to them. During the past few years all farmers' conventions have realized the necessity of conducting their meetings on a strict business

through it. A glance at the following programme will advise all those interested of the subjects to be covered and Mr. C. E. Lawrence, the genial Secretary of the Local Board of Control at Kamloops, will be glad

tigations, C. P. R., Strathmore, Alta. A lecture illustrated with lantern slides on "Practical Irrigation."

R. M. Winslow, Secretary, British Columbia Fruit Growers' Association, Victoria, B.

C., "Apple Orchard under Irrigation Conditions."

Professor W. S. Thornber, State College of Agriculture, Pullman, Washington, "Dry Farming."

Professor L. S. Klinck, Dean, College of Agriculture, Vancouver, B. C. An illustrated lecture on "Improvements in Corn Varieties."

P. E. French, Assistant Horticulturist, British Columbia Government, Vernon, B.C., "Potatoes and Truck Crops under Irrigation."

A. L. Fryberger, Gem P. O., Bassano Colony, Alberta, "Varieties of Crops Successfully Produced in the Bassano Colony."

P. H. Moore, Superintendent, Dominion Experimental Farm, Agassiz, B. C., "Can Sugar Beet Growing be made a Commercial Enterprise in British Columbia."

J. C. Dobson, Chairman, Hydro Electric Company, Kamloops, B. C., "The Possibilities of Irrigation by a Hydro Electric Power in the Thompson Valley."

Dr. J. G. Rutherford, C.M.C., Superintendent of Agriculture and Animal Industry, Canadian Pacific Railway, Calgary, Alta., "Livestock and Irrigation."

W. T. Macdonald, Livestock Commissioner, British Columbia Government, Victoria, B. C., "Livestock and Irrigation."

H. W. Strachan, Superintendent, Alexandra Ranch, Tranquille, B. C., "Mixed Farming."

William Young, Comptroller of Water Rights, British Columbia Government, Victoria, B. C.

F. H. Peters, Commissioner of Irrigation, Department of the Interior, Calgary, "Irrigation Districts Acts."

W. E. Scott, Deputy Minister of Agriculture, British Columbia Government, Victoria, B. C., "The Farmer and City Man."

G. R. Mornoch, President, Board of Trade, Lethbridge, Alberta.

F. M. Black, President, Board of Trade, Calgary, Alberta.

John F. Sweeting, Industrial Agent, C. P. R., Calgary, Alberta, "The Possibility of Sugar Beet Growing in Alberta."

The Phytophiline Distributors have just received their Spring shipment of the well-known non-poisonous insecticide, "Phytophiline." Despite increase in cost of raw materials, there will be no change in price to customers.

ENSURING PURE FOOD SUPPLY.

Instructive Address before B. C. Veterinary Association Meeting in Victoria.

Following the adoption of the idea to hold public meetings in order that discussion of matters pertaining to health and hygiene shall prove of public interest the B. C. Veterinary Association held a special meeting at Victoria during May. The first speaker to address the meeting after the opening remarks of the chairman, Dr. S. F. Tolmie, was Dr. Knight, the chief provincial veterinary inspector, who took for his subject "Dairy Inspection," and explained the objects and procedure of the dairy inspection system of British Columbia. So far, Dr. Knight told his audience, there have been some 38,000 head of cattle inspected in the province, and there was no system of inspection in other provinces of Canada to compare with that in force in British Columbia. He explained the important things that were insisted on in the regulation of the milk supply, such as the health and cleanliness of cattle, good ventilation, sanitary stables, and the care of the dairy itself, and said that the consumer can at any time learn the record of a milk dealer and thus safeguard himself in the buying of wholesome milk.

Dr. Jagger, the health of animals inspector for Victoria, was the next speaker. He dealt very ably with the "Relation of the veterinary surgeon to the public and the stockman," and explained the rapid progress made in veterinary science along pathological lines. He explained how raw milk was one of the most dangerous as well as one of the most valuable forms of human food, and the good work done by the veterinary not only in the way of safeguarding the public, but also of assisting the farmer and helping him to save the lives of many valuable animals by the control of contagious diseases and advanced methods of operative surgery.

Preventive Measures.

Dr. Jagger explained that in this province the assistance of a veterinary inspector was always available for the service of the farmer, and told his hearers that during the severe outbreaks of foot and mouth disease below the international line in recent years, the work of the provincial inspectors had prevented a single case from developing on this side. He also instanced the striking

results in the case of hog cholera. Whereas millions of dollars are lost annually in the United States from this cause, Canadian farmers suffer a loss of less than 1 per cent.

A very interesting statement was made concerning the veterinary work in the present war. Where as in former wars the life of a cavalry horse was only two weeks on the average, and that of an artillery horse four weeks, in this war the loss among horses was not over 10 per cent. The sphere of usefulness of the veterinary is rapidly increasing, and the most useful work of the future was in the line of preventive medicine.

The address of Dr. J. G. Jervis, of Vancouver, who has charge there of the meat inspection at P. Burns' abattoir, was listened to with great interest. Dr. Jervis explained in detail several of the diseases in animals which are dangerous to man and the methods of inspection, showing that this is very thorough and that, when meat is thus inspected there is practically no chance

Concluded on page 968

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IT means VALUE. Just to the extent that a car is standardized does the buyer's dollar approach the maximum of purchasing power.

Standardization means definite, proved quality, known manufacturing costs and reduced selling costs.

Of the million autos that will be sold in 1916, 75% will be standardized cars selling for less than \$1000.00 each. This remarkable American achievement is the direct result of standardization.

Finally the upholstery has been standardized by the almost universal adoption of



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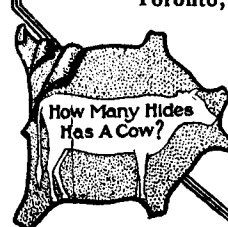
40% of all 1915 cars sold were upholstered in this proved, guaranteed material and in 1916 the total will be at least 60%.

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Vol. VIII. JUNE No. 6

EDITORIAL

THE WOOL MARKET.

Sheep raising should not only be profitable now but the market for wool should be good for some considerable time. The demand for wool the world over is unprecedented owing to the exactions of the war. The world has never produced enough new wool in a year to supply the needs of even the wool-wearing people; indeed, none of the wool-wearing countries grow enough of the staple to clothe themselves. It is said that more than two-thirds of the world's exportable wool is produced in countries that consume very little at home on account of the warm climate or the sparse population.

Not only is the world's demand for wool increasing as wool-wearing countries increase their standards of comfort, but now we have a world-wide war. Hitherto, wool-wearing nations have been keeping up the supply of clothing by wearing cotton, silk, and other fibres with wool, and using all-wool-fibre over and over again until it was worn out. Thus the woolen rag trade has assumed considerable proportions in certain parts of the world. In war, however, the experts tell us that most of the wool worked up for the armies is destined to disappear forever. In this as in other things, war is destructive and not creative. Soldiers' clothes are necessarily worn out far more quickly than those of civilians and when the soldier dies the clothes are burned or buried with him, or are thrown away where the rag-gathering organizations cannot get them.

To further account for the growing wool scarcity there is the disorganized state of sheep growing industry, for the countries at war have one-eighth of the sheep of the world, and great numbers of sheep have been slaughtered or turned out to pasture.

All this, of course, is having a tremendous effect on the wool market. In British Columbia Live Stock Commissioner McDonald says the price of wool is likely to reach well over 30 cents per pound unwashed. During 1914-15 the demand for breeding sheep in British Columbia exceeded the supply, while this year a greater shortage is anticipated. Mr. McDonald advises all prospective purchasers of either rams or ewes to make arrangements early in the season for such sheep as they require. He gives it as his opinion that shortly after weaning-time this fall there will be very few sheep available. He does not wish to lead people to believe that the present high prices will remain indefinitely, but does recommend farmers to keep a flock of sheep of such size as circumstances warrant where the conditions are favorable.

HELPING IN THE WAR.

Last year's campaign for greater production demonstrated what Canadian farmers can do when stirred by calls of patriotism. Incidentally many realized in pleasing manner how profitable was the effort put forth for more production.

This year the cry for more thrift and more production is greater than ever. The war becomes increasingly heavier. The burden on all Canada is greater if we are to do our duty by the Empire and by ourselves. This war more than any other war in the world's history is an economic war. The nation that stands the strain the better and that maintains its war the better is going to win out. While our soldiers are doing their duty nobly at the front it is as equally important that we at home should do our duty as nobly. Every pound of food raised at home means that much less to import and that much more money left to maintain the nation and our fighting forces at their best.

The moral is cultivate as much ground as possible. In view of the greater number of men engaged in military work this year than last this will be a harder task than ever this year but it can be accomplished by all putting forth a little greater effort.

Recent figures showing the exports from the United States into British Columbia through the port of Seattle during the month of March indicate something wrong in the production of marketing of agricultural products in British Columbia and present a problem that our various Boards of Trade might well turn their attention to as is the Victoria Board of Trade at present.

Boards of Trade and other similar bodies are prone to get much agitated over problems effecting the province from a distance as far removed at Ottawa but here is a question contained within our own province and striking at the very foundations of our prosperity.

The imports to this province in March amounted to \$3,129,425 in value, while the British Columbia exports to Seattle were \$571,762. Of the material exported from British Columbia a very large part is made up of copper blister for refining—nearly 5,000 bars, valued at \$392,705. Paper and coal are the other big items in the list of British Columbia exports.

The heavy shipments of agricultural produce passing through Seattle to British Columbia, where they might be grown under equal facilities, are worthy of special mention. A partial list of the goods, with corresponding value, is as follows:

Apples, 5,812 boxes, \$5,929; beans, 808 bushels, \$3,622; butter 514 cases, \$8,354; cheese, 179 cases, \$1,578; eggs, 1,347 cases, \$9,868; fruit (dried), 875 cases, \$2,337; fruit (fresh), 6,219 cases, \$12,082; meat, 2,369 cases, \$21,079; seed, 446 sacks, \$4,056; wheat, 1,754 bushels, \$2,262; vegetables, 3,222 crates, \$7,303.

KEEPING BOYS ON THE FARM.

Many farmers keep on deploring the fact that their boys are leaving the farm for city life and that while they know the boys are neglecting splendid opportunities at home they cannot make them see it. What are such farmers doing to keep the boys at home?

Do you teach the boy from earliest childhood that farming is one of the most ennobling professions; that it is an occupation that requires brains, judgment, system, study—in fact all of the things brought into use by the successful business man of the city?

"All work and no play makes Jack a dull boy." Do you realize that there should be

limitations to the hours the boy works and that he is entitled to his amusement just as much as is the city youth? If the boy does not get these things at home he is going away to get them.

Without desiring to preach let us ask if you keep the home attractive. Not only does one feel better for living in a comfortable, well furnished home, with a well kept garden but these things all have an effect on character. Boys take a pride in their home—providing you make it such a home as they can take pride in. A little extra effort will keep a garden or lawn with flower beds such as is the delight of the best residential sections of the city. It is such things as these that tend to make boys contented with their homes and their occupations.

All boys will not and should not stay at home on the farm, but a great many boys would make a bigger success in life if they never tried to break into the cities. More of them would stay at home, too, if the home did their full duty by them as we now see it in the light of modern development and thought.

AGRICULTURAL AID.

A few details of the working of the newly appointed Agricultural Credit Commission as explained by Mr. A. Lucas, M. P. P., a member of the Royal Commission on Agriculture, who recommended the bill authorizing the commission, will be instructive.

The commission may accept as security for loans, first mortgages upon agricultural land in the Province of British Columbia free from all encumbrances other than interests vested in the Crown. No loan will be accepted for a less amount than \$250 or for a greater amount than \$10,000, and no loan will be accepted for an amount exceeding 60 per cent of the appraised value of the land offered as security, calculated on the basis of value and productiveness when the improvements in respect of which the loan is required shall have been effected. The Commission may advance by proportionate instalments as the work progresses.

Loans may be made for the following purposes: (a) The acquiring of land for agricultural purposes and the satisfaction of encumbrances on land used for such purpose.

(b) The clearing, draining, dyking, or irrigation works.

(c) The erection of farm buildings.

(d) The purchase of live stock, machinery, fertilizers, etc.

(e) Discharging liabilities incurred for the improvement of land used for agricultural purposes and any purpose that, in the judgment of the Commission, is calculated to increase land productiveness, and to associations organized under the "Agricultural Associations Act." with the approval of the Lieutenant-Governor in Council.

Before granting any loan the Commission shall ascertain that the loan is justified on the following grounds: (a) The value of the security offered, estimated on the basis of agricultural productiveness.

(b) The desirability of the proposed loan for any of the purposes described above.

(c) The ability of the borrower to make a fair living for himself and his family from the farming of his land when improved as proposed by means of the loan applied for, and after having paid interest and amortization charges.

(d) That the granting of the proposed loan for the specified purpose will, in the opinion of the Commission, be of economic benefit to the borrower.

All applications for loans must be made on blank application forms supplied by the Commission. The Commission shall make long-date loans, short-date loans, and single-season loans.

A long-date loan as authorized shall be repaid to the Commission with interest at either thirty-six and a half years, thirty years, or twenty years. The rate of interest shall not exceed one per cent. more than the interest paid by the Commission on the bonds issued to secure the funds. The combined charges of interest and amounts necessary for the extinguishing of the debt shall be payable half-yearly, each instalment being equal.

The commission may make short date loans not exceeding \$2,000 to an individual, or \$10,000 to an association, for a period, to be determined in each case in the discretion of the Commission, not less than three years and not to exceed ten years. Short-date loans need not be amortizable, but may be made on such terms as to repay ment as the Commission deem fit, the interest being the same as on long-date loans.

The Commission may make single-season loans, repayable within twelve months from the date of application. Such loans shall be secured by mortgage and promissory note. Such loans shall not exceed \$2,000 to any one person or \$10,000 to any association, and may be repaid at any time, and additional loans may be secured under the provisions of the Act.

The money borrowed may be repaid to the Commission in full or in part on any interest-due date; in sums of \$25 or a multiple of \$25, in reduction of the mortgage debt, and from that date interest shall cease on the amount so paid.

A PUBLIC SCHOOL COW.

All the advanced ideas do not originate in America. Neither is this true of progressive of "freakish"—whichever you may choose to call it—ideas looking towards the advancement of agriculture. From Scotland comes word of what is known as the public school cow and while the story is interesting there is perhaps a suggestion that might be worked out in some other form as we already have it in our school gardens. A gentleman, interested in the training of children for farm life, has presented a cow to the public school at Kelso. The cow has grazing pasture near the school. The pupils learn under expert teachers how to feed this cow, milk her in sanitary fashion, how to care for the milk, set the cream, skim it, and make it into butter. A little model dairy of a simple kind is fitted up in the school. It is a little demonstration farm, as it were, in the school, and the results, as reported, seem to be very satisfactory. The children are delightfully interested in their school work, and are growing up under a strong inclination to stick to the land. And further, the children at this school are reported to be keeping their regular school work up to the standard and doing better than most of the ordinary schools in Scotland not blessed with a public school cow. Besides this, the cow is a money-maker for the school. The butter and by-products sold bring a good price. Following the story further, one can readily imagine how interested the pupils of this school are in their cow. How its every movement is watched, how much milk she gives, how much butter is made, and what it sells for. Then there is the feeding and caring for the cow. Everything done will be told to the folks at home. And one can imagine a spirit of rivalry developing among the farmers of the district to have their cows do

as well as the school cow and to have their butter sell for as much as the school butter.

FRUIT CROP DAMAGE.

Conflicting reports are received from various parts of the province regarding the damage sustained by the fruit crop this year through the frosts. While undoubtedly some sections have suffered quite severely it is probable that on the whole British Columbia has escaped much easier than fruit districts in Washington, Oregon and Idaho.

Washington strawberries have suffered some injury. Ice formed in the Yakima valley and the damage to orchards was heavy. The Idaho state agricultural inspector reports Southern Idaho's crop badly injured, with prospective losses amounting to two million dollars. The Oregon crop also suffered and in fact in these states no such general frost damage is said to have been sustained in years. It is further stated that with the cold and wet spring even winter wheat promises a much smaller crop than last year.

Under these circumstances it is quite likely that producers in the states affected will endeavor to recoup losses by higher prices. This in turn will have its effect in British Columbia where the foreign competition is not likely to be so great with a tendency to bigger market prices on the shipments coming into the province. To offset this there is also to be remembered that the public may be inclined to buy sparingly with the price of living constantly increasing, and, as regards fruit, with sugar keeping steadily on the rise.

TO CURE A HARD MILKER

Some cows are naturally hard to milk; others are made hard by weak-handed milking. A woman or child with hands not strong enough for milking causes a cow to become hard for anyone to milk. To cure such a cow, oil the teat freely before starting to milk, so that the oil will work into and soften the skin. Then milk the cow with as much force as possible, squeezing hard. This treatment will usually cure an ordinary hard milker. Once in a great while it is necessary to cut the muscle surrounding the inside of the teat with a lance-like knife.

This, however, is very likely to ruin the cow if not done with great care to avoid cutting too much and causing permanent leakage. It also makes a sore which is painful to the cow at the time of milking, and if done when the cow is giving milk, the wound grows together and the muscle becomes tighter than before.—R. M. Washburn, University of Wisconsin.

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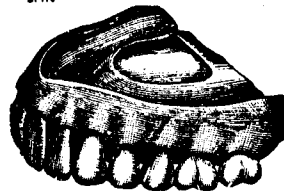
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Beekeeping in British Columbia

By WILLIAMS HUGH

VANCOUVER FAIR—AUGUST 14 TO 19

Beekeepers' Exhibit Prize List

The committee of the Beekeepers' Association of B. C. have issued the following list of prizes for competition in the products of the Apiary:

1. Honey extracted not less than 10, 12oz jars, \$3, 2, \$1.

Honey, bulk, in glass, 5 quart jars, \$4, \$3, \$2.

Honey in comb, 12 sections, \$4, \$3, \$2.

Beeswax, best display, not less than 5lbs, \$6, \$4, \$3.

Honey in comb, 50 sections; 1st \$10.00, 2nd, toilet set, presented by Miller & Co., Vancouver, value \$7.50; 3rd, special bamboo jardiniere, given by T. J. Trapp & Co. Ltd., New Westminster.

Honey extracted in glass, 50lbs; 1st, special, gold medal presented by Mr. H. T. Lockyer, general manager Hudson Bay Co., Vancouver, value \$25.00; 2nd \$7.50; 3rd, special, 5lbs medium brood foundation, presented by Wm. Rennie & Co., Seedsmen, Vancouver.

Best exhibit of bees, queen, workers and drones in observation hive, \$7, \$5, and \$3.

Best display of honey produced by a lady beekeeper, under her own management; 1st, special gold-mounted umbrella; 2nd, special, hive complete with deep and half depth supers, presented by G. J. Spencer, manufacturer of beeware, Vancouver.

Best display of sections as taken from hive in super; Shield, presented by Williams Hugh, secretary-treasurer Beekeepers' Association, B. C. The shield to be won three times before becoming the property of the winner.

To the person winning the largest number of points in this section; 1st, special gold medal; 2nd, silver medal; 3rd, bronze medal, presented by the Exhibition Association, Vancouver.

There will be an exhibition of all the latest bee appliances, hives, etc. Mr. Wilfred M. Smith, B.A., is secretary of the exhibition committee of the Beekeepers' Association.

SWARM PREVENTION AND CONTROL

W. J. Sheppard, F.B.I.

Methods for swarm prevention, or the control of swarms are of great importance to beekeepers who wish to secure good yields of honey. Strong colonies are the only ones that give satisfactory returns during a honey flow. Colonies weakened by sending out two, three, four, or possibly more swarms, all of which are usually put singly into new hives by the uninitiated beekeeper, cannot be made profitable by this means, except by the production of bees instead of honey. Much thought and ingenuity have been devoted to this problem during recent years, and considerable progress has been made. There has been no way found, however, to permanently alter the natural disposition of bees to swarm, and probably never will be, as the act of swarming is Nature's provision for the perpetuation of the species. It is well to remember that no system of management connected with beekeeping is infallible, and that bees, like the proverbial pig, will not always go the way we expect or want them to. An old adage runs, "Bees do nothing invariably." This is very true as seasons and conditions are constantly changing, affecting bees as well as other animate things.

The immediate causes of swarming may generally be attributed to either of the following conditions:

1. A crowded state of the colony, so that the queen has not sufficient room to deposit eggs.

2. Want of sufficient ventilation within the hive.

3. A superabundance of drones.

4. The want of room for storing honey during a honey flow.

Breeding queens by selection from colonies showing little or no desire to swarm has been tried and found helpful in some cases, in arresting the swarming impulse, but as it would be impracticable for most beekeepers to attempt this, or to keep such a strain of bees, if once established, from reverting sooner or later, to the ordinary type, this may be regarded as not being of very great general utility.

An old idea for the prevention of swarming is the cutting out of queen cells. By systematically going through the hives once in every ten days and destroying all queen cells it is possible to stop swarming by this means. The operation has, however, to be very thoroughly performed in case any cell should be overlooked, even when this has been accomplished and every cell destroyed, bees badly affected with the swarming fever, which has been likened to the condition of the broody hen, will sometimes swarm out without waiting to start fresh ones. The chief objection to this plan is that it takes up a good deal of time, especially when a number of hives have to be attended to.

After a swarm has issued the most important thing to bear in mind is that the colony must be built up again quickly, and as near as can be to its former strength, or the honey crop will be very considerably curtailed, or possibly lost altogether. One of the plans frequently adopted to effect this is to move the old hive to a new position and put the swarm in a fresh hive in its place, by this means the swarm will be strengthened by any bees that are out flying in the fields, and a good many of the bees from the old hive will go back to it. The swarm may also be further strengthened by transferring some of the frames of sealed brood from the old hive. The old hive will then be so weakened that it will not be strong enough to throw off any after swarms, but headed by a young queen, it will build up into a good colony for the following season. Any supers that were on the old hive should be transferred to the swarm now on the old stand. A colony so treated will sometimes swarm again when a similar operation has to be repeated.

Another plan that has given good results is to put the swarm in a new hive on the stand of the old colony, setting the old hive against it and facing the same way. A week later move the old hive to a new stand ten feet away, the flying bees from the old hive will then join the swarm and strengthen it considerably. There will be but little risk of any after-swarms by this means.

Demaree Plan

A favorite method of swarm prevention in some parts of the U. S. A. is known as the "Demaree plan," it is operated as follows: Just before the colony is ready to swarm, put all the brood except one frame in a second storey over a queen excluder, leaving the queen below with the one frame of brood and, preferably, empty combs, fail-

ing which, frames with full sheets of foundation. Cut out all queen cells. The brood frames above, as soon as the brood hatches out, will be used by the bees for storing honey. The "Demaree plan" slightly varied has been tried in Ontario under the guidance and direction of the Ontario Agricultural and Experimental Union, and has been found to answer there and to increase the honey crop. The variation consists in giving an additional storey of empty combs between the bottom storey and the brood, making three in all. By this means the old combs in the top storey, which may contain dark honey, gathered previously, can be taken away before the bees begin to store the white honey crop from clover.

The following adaption of the "Demaree plan" I would like to see tried this year, and have reports on the results at the end of the season:

As soon as the bees begin to cover the outside frames in the brood chamber, usually early in May, give them an extra body containing another set of combs. If combs are not available, full sheets of foundation must be used, I think the best way is to put this body underneath the other, so that the brood will be above, and then not so likely to get chilled. This will give the queen all the room she requires, and the colony should go ahead and get strong rapidly. At the commencement of the honey flow, which is generally towards the end of June, or so soon as there are indications of swarming, by queen cells being started, search for the queen, and place her with one frame of young unsealed brood, in the middle of the empty combs in the first storey, next the bottom board, as in the "Demaree plan," then put on the queen excluder, next will come a second storey containing a set of empty combs. Over this second storey place a screen wire escape board, with the slide over the escape opening closed, and immediately above this a third storey, containing the remained of the brood. If there is more than sufficient brood to fill this storey it can be used for strengthening weaker colonies. A small entrance is provided above the screen wire board so that the bees can fly from the top storey and most of the adult bees will go back to the main entrance below. This will not affect the brood, however, which will be kept warm by the heat ascending from the lower storeys. If the queen cells are all destroyed in the top storey, the screen wire can be removed after ten days, as the brood will then be too old for any more to be built. By using the screen wire separation between the second and third storeys there is no need to search for or cut out queen cells, with the possibility of missing some at the time of putting up the brood, except on the one frame to be placed below containing the queen. This can be done subsequently, and if a queen should be hatched out in the meantime she cannot get down below and cause trouble. The upper storey can easily be kept under observation and control. If preferred, a young queen can be allowed to remain in the top storey, she can come out at the upper entrance to get mated, and as soon as she is laying can be utilized to take the place of the old queen, thus no time need be lost and the risk of requeening with a strange queen dispensed with. Should it be decided not to supersede the old queen, the queen cells in the upper storey can be destroyed and all the brood permitted to remain and hatch out, thus strengthening the colony below, in which case a large amount of honey should be obtained. The plan can just as easily be put in operation after a swarm has come off and permits of other variations, such for instance, as dividing up the brood combs

into nuclei at leisure, if increase is desired. I do not see any objection to the upper entrance being allowed to remain until the end of the season, as it will provide additional ventilation, and it can be told at a glance which hives have been treated. The wire screen board will be found a useful appliance in the apiary in other ways. When fitted with a Porter bee escape, it can be used for clearing supers of bees and will be found preferable to all wood escape boards, as the heat ascending from below will help to keep the combs warm after the bees have left them, and so make them easier to extract. When used for this purpose it will be necessary to have the screen wire double. It can also be used or uniting colonies and also for pushing weak colonies along by putting them over strong ones, with the wire screen between. In the latter case a small piece of queen excluder zinc would have to be fixed over the escape opening to allow bees to come up from below. It will also be found useful for protecting honey from robber bees when supers are being removed.

In winter it can be used for placing next the frames, underneath the packing, thus providing a beeway over them and permitting the colony to be inspected at any time without disturbing the bees.

Should they be found to require feeding in winter or early spring, a cake of candy can be placed over the escape opening, after removing the slide. Syrup can also be fed in the spring by inverting a Mason jar, with a perforated can over the wire screen, which as the position of the cluster can be seen,

The writer of the above article, Mr. W. J. Sheppard, is Fowl Brood Inspector for the Kootenay District, and Hon. Secretary-treasurer of the Kootenay Beekeepers' Association.

NOTES FROM MY APIARY

I do not keep anything in the way of a diary of doings in the apiary, but, like most folks who dabble with, and to some extent, study the ways of bees, I sometimes run across things which are in the conundrum class, and if I do not at the time make any book entry of the happening, I am very sure to make a mental note of it for future reference. Later, when wind, rain, frost, snow, etc., are all doing their best to prove my ideas on wintering are incorrect, and I have, perforce, to possess my soul in patience, then comes the opportunity to commit some of these bee riddles and their answers to writing.

1. About the middle of last September, when the honey flow was long past and but few flowers were left, I looked into a hive which I wished to requeen. The weather, however, was too cool, for I found the bees mostly at home and so thickly clustered on the frames that I could not find her majesty. I omitted to contract the entrance and robbing resulted; later I found, among the dead bees around the entrance, the old clipped queen and three other. Now if the bees were superceding, as I suppose, why were they also hoarding queens? September is not the swarming season and the bees had plenty of room, and moreover, there was no possible chance of any honey flow before the spring.

The idea comes that drones are scarce thus late in the season and I presume that the bees in all the hives are aware of this. One might be forgiven for jumping to the conclusion that bees do under some circumstances hoard their virgins in case the first ones to go off on their mating flights should get into difficulties. This would be just as reasonable, and require no more forethought than hoarding them to enable after-swarms to issue. I do not know how many

more queens there may have been in that hive, but I took an early opportunity to run in a fertile one, so as to be on the safe side.

2. We have been advised by some writers to strengthen weak colonies whenever possible, by shaking frames of newly hatched bees in front of said colonies. One writer in "Gleanings" recently said that "this method is not satisfactory," and so I found; here is my experience. A and B were nuclei, placed some six feet apart, of equal strength and with laying queens. Young bees, as advised, were shaken in front of each within a few minutes of one another. A accepted them, B. rejected them. One week later more young bees were shaken in front of A, but were rejected.

3. The honey flow during 1915 was very unsatisfactory from our own and the bees standpoints. Here's proof of the latter. From the middle of June to the end of July all my colonies were on the down grade and attempts to encourage the queens in three and four frame nuclei by adding an occasional frame of brood was not welcomed very enthusiastically. The brood hatched out alright, but in almost every case these young colonies reverted to their original three or four frames. Now I wonder whether they foresaw the future and the prospective dearth of stores deterred them from raising more young ones?

Again, I wonder why the bees in strong colonies should have gone back so much during June and July, when the usual honey flow from Fireweed is in August. This does not look like foresight. Perhaps the real fact is that the bee is very shortlived and weather conditions affect her as they do a weather glass. That is, she records present

conditions rather than forecasting the future.

Another effect of the very unfavorable weather conditions was that though queen cells were noticed in several hives, they were soon pulled down again, without any swarming or supercedure worth mentioning. Under these circumstances one would have had a big contract to stimulate the bees sufficiently by feeding during the eight or more weeks between Fruit bloom and Fireweed to keep them from backsliding. Would it pay?

GARDEN APIARY.

St. Nicholas, B. C.

ITEMS OF INTEREST TO B. C. BEE-KEEPERS

The following beekeepers have joined the Beekeepers' Association of B. C. since the last general meeting: J. S. Lucas, Victoria; Capt. J. B. Ghatt, Sandpitt, Q. C. I.; W. J. Sargent, Victoria; Miss E. E. Reynolds, Langley Prairie; Chas. F. Street, Ladysmith; J. W. Ellicott, Langley Prairie; G. J. Reade, Burquitlam; Wm. Wright, New Westminster; W. O. Bamsfield, Vancouver; Jack Morrison, Errington.

Mr. Thos. H. Lehman writes: My bees are doing pretty well, considering the dark weather we have had. I have had to put a fifth super on some of my hives to make room for the bees and honey. One colony has made two supers of maple honey already this season. There has been a great flow of maple nectar, the worst drawback was the hard winter. There were not enough bees to carry honey when the flow commenced. We will have to try and have the colonies stronger to meet the maple flow.

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HIVE BODIES OR DEEP SUPERS—Cedar with galvanized iron rabbets, without brood frames; 5 or over, each 40c; less than 5, each 50c

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ALL OTHER BEE SUPPLIES—10 per cent discount from our regular price list.

If you are not a member of the B. C. Beekeepers' Association and wish to take advantage of the above special prices, you may do so by enclosing an extra dollar with your order. This dollar will pay your membership fee for one year in the B. C. Beekeepers' Association, also a year's subscription to the B. C. Fruit and Farm Magazine.

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SWARM CONTROL

By W. H. Lewis, Edmonds, B. C.

Immediately after my remarks on Swarm Control at the first meeting of the Beekeepers' Association, I was asked if I had any of my "non-swarmed queens" for sale. Inadvertently I switched to queen rearing. I wish now to state that the queen, the bees, or the hive have nothing to do with it. I would not hesitate to say that I can take the "swarmiest" ten colonies of bees in the country, seeing to them once a week, and there will not be more than one swarm, unless it is a supersedure (which I call freaks, and cannot be controlled) during the whole season, be they Italians, Carniolans or Hybrids, and in eight or ten-frame hives. I have all three varieties of bees and use principally eight-frame hives, which are the best for this country, but this is outside the present article. In future I will have something to say on that subject.

My procedure is, as soon as the hood chamber is full, hunt out the queen, put her with the frame or hood she is on, with a full set of combs, on the bottom board, put a queen excluder on top, put the hood, after filling, where you have taken the frame or hood, with the queen, with another comb or a full sheet foundation, on top of the excluder, adding extra room on top, if combs; if foundation, just above the excluder. By this method you will have to open the hive and cut out queen cells that are liable to be started on the hood in about a week, otherwise you may have a scrub queen go through the excluder, sting the old queen, and thus become the head of the colony.

If I cannot find the queen at the first examination, I put the whole set of combs on top without an excluder and in about a week or so, I generally find the queen laying in the upper storey, when I reverse the position of the two storeys, putting the old hood on top with the excluder between. This is probably the easiest way, and it is hardly necessary to hunt for queen cells afterwards as the youngest brood in the lower chamber will be about a week old and there is not much chance of any being started. It has some disadvantages, however, for as soon as you add a lot of empty combs on is not much chance of any being started. It has some disadvantages however, for as soon as you add a lot of empty combs on top of the old brood chamber it is at once cooled off and the queen almost stops laying until she re-establishes herself in the upper storey. It is one of the weak points of many others, of the systems advocated by the department. Might do for Texas or Oklahoma, where they have warm night and that is where it came from.

When the bees show any uneasiness by fanning give more ventilation by strips of shingle. Gently raise the front of the hive and push in, one on each side. Clustering on the front is nearly always due to want of room. When the surplus chamber is about half full, or less, bees will begin to hang out. Heat cuts no figure on the lower mainland in swarm control, and makes it much

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easier than east of the mountains or to the south.

Now listen, about two weeks ago (this is the 21st) while others were counting the cells of brood and estimating the ounces of honey, there were in the hive to save their bees from starving, I had colonies full to the sides, queen cells half finished and would have swarmed in a day or two if not attended to. They were neglected on account of the very bad weather. When I had the time to look after them I cut out the queen cells, hunted out the queen, put her with the brood comb on a fresh lot of combs, exactly as I have stated above and none of them have swarmed, neither do I think they will. I believe I broke up the swarming fever at once, although I have often read that it is nearly impossible to stop swarming after cells are started.

I often practise spreading brood (but not much this spring on account of the cool weather) to get my hive full before time to remove the queen. I put in a comb with honey in it, after breaking the cappings, in the middle of the brood chamber, never spreading unless you have at least two good combs of brood on each side, a fair amount of honey and bees and the weather favorable. In about a week or so I again spread and so on till I get the hive full to the sides. But it must be carefully worked, or more injury than good is done.

I stated that I had not had a swarm in seven years. It was an error. I have not had a prime swarm since I moved to my present home, which is nearly seven years, but not the seventh bee season, only the sixth. For some years before that, however, swarms were very scarce and if I did

not make increase artificially in the fall I would soon have few bees left through the usual winter losses.

I do not claim any originality for my methods, they are simply a combination of old methods of swarm control, which I have worked together, and a country where the climate is favorable.

Mr. W. J. Sheppard, foul brood inspector of Nelson, B. C., writes: "I wish you would get some of your members to try the suggested alteration in the 'Demarec Plan of Swarm Prevention and Control,' as I believe it will increase our honey crop. Morly Pettit, of Ontario, writes me very favorably of it and is going to experiment with it this season." The article in question, published in this issue, is very comprehensive, and if the instructions are followed out, should be the means of an increased honey crop with less swarming. Mr. Sheppard has promised to send a sample wire screen escape board, for the inspection of members.

Will some of our members try the experiment and report. Science is teaching the world that observation and experiment is the best authority, the only way to arrive at the truth in beekeeping.

"Mr. J. Dundas Todd, provincial instructor of beekeeping, visited Point Grey last week and inspected several of the local apiaries. It is proposed to form a Point Grey Beekeepers' Association. Anyone interested should communicate with Magistrate Raney."—Vancouver Province, May 8.

Continued on page 961

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Planning a Dairy Barn

By A. R. GREIG, Professor of Agricultural Engineering and A. M. SHAW, Professor of Animal Husbandry.

Many mistakes can easily be made in building a dairy barn, and frequently they are not discovered until it is too late to correct them.

Costliness is not a prime requisite of the dairy barn. Its cost should be in keeping with the size and revenue-producing power of the farm. Money invested in a dairy-barn should pay at least 10 per cent. per year to take care of the depreciation, taxes and insurance. Many barns pay a great deal more. If \$1800 is invested in a dairy barn to house thirty cows, with a loft to hold sufficient roughage for their winter feed, \$180 per year would have to be charged up as rental for the barn. This

one feed-alley only and two manure alleys. This arrangement will probably suit the majority of dairymen because of the greater ease in feeding. The manure, of course, must be removed in a litter carrier, a wheelbarrow, or perhaps with a stone-boat and a single horse. Where a silo is used, a central feed alley is very convenient; a truck can be wheeled down it and all the animals fed at once.

Sanitation and Comfort.

The stable should be built so that it can easily be cleaned not only of manure, but also of dust and litter. No broad window ledges should be left to collect dust, and the floors should be tight and smooth to

Convenience in Feeding.

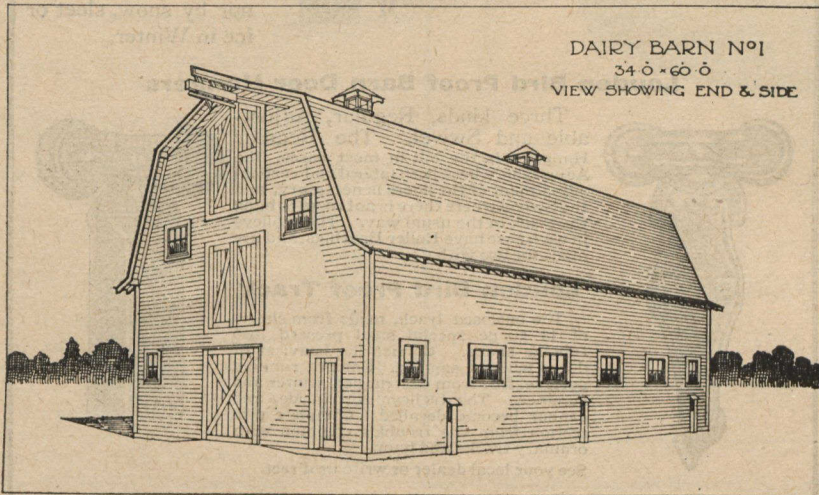
A considerable part of the cow's feed consists of roughage in the form of hay and straw, oat-sheaves, and silage. If this bulky food is not conveniently located, it requires a very large amount of unnecessary work to handle it, and as labor is, as a rule, expensive, the necessity for care in this respect is obvious. In a barn with long feed-alleys a truck of some kind can be used to advantage. As a rule the storage of roughage in a loft overhead is to be recommended, so arranged that it may be put down through chutes to the feed-alleys in front of the cows. The location of the silo is also important. If possible, it should be placed close enough to the feed-room of the barn so that only a single handling of the silage is necessary.

Feed Room.

The feed room should not be too small and should be conveniently placed so as to connect directly with one or more of the feed alleys; also with the silo if one is used, and with the root cellar if possible. A stairway leading from it to the loft is much handier than an upright ladder on the wall of the barn. Feed-bins or chop-boxes of generous capacity should be built in the feed room. It is convenient to fill them by chutes from large bins located in the loft overhead, but as this arrangement entails a good deal of labor in raising all the chop to the second floor, it is not always practical or expedient.

A MEDIUM SIZED BARN.

In Fig. 2 is shown the ground-floor plan of a dairy barn 34x60 feet, with accommodation for twenty-two cows in single stalls. Two roomy box stalls are provided at one end, one for keeping a stock bull and the other suitable for using as a maternity-box for cows about to calve. A calf-pen is located at the opposite end, where it will be handy both to the milk-room, which should



would amount to \$6 per cow per year. Sometimes too little money is spent in barns, and the result in that case is usually a great increase in labor. Work has to be done at a disadvantage and it may be impossible to keep such buildings sanitary and comfortable.

Following are a few of the main points to be kept in mind in building and equipping a dairy barn.

Site.

High, well drained land should be chosen as a site for a dairy barn, and it is important that the barnyard be well graded so as to slope away from the buildings. Where this is overlooked a very muddy barnyard is the result.

Size and Shape.

The width and the length of dairy barns must vary with conditions, but 30 feet is as narrow as should be used where two rows of cows are to be stabled. If a narrower barn is used there will not be sufficient space left in front and behind the cows for feed and litter alleys. A width of 34 or 36 feet has been proved by experience to give the best results in comfort, convenience, and economy of construction for two rows of cows either facing inwards or outwards.

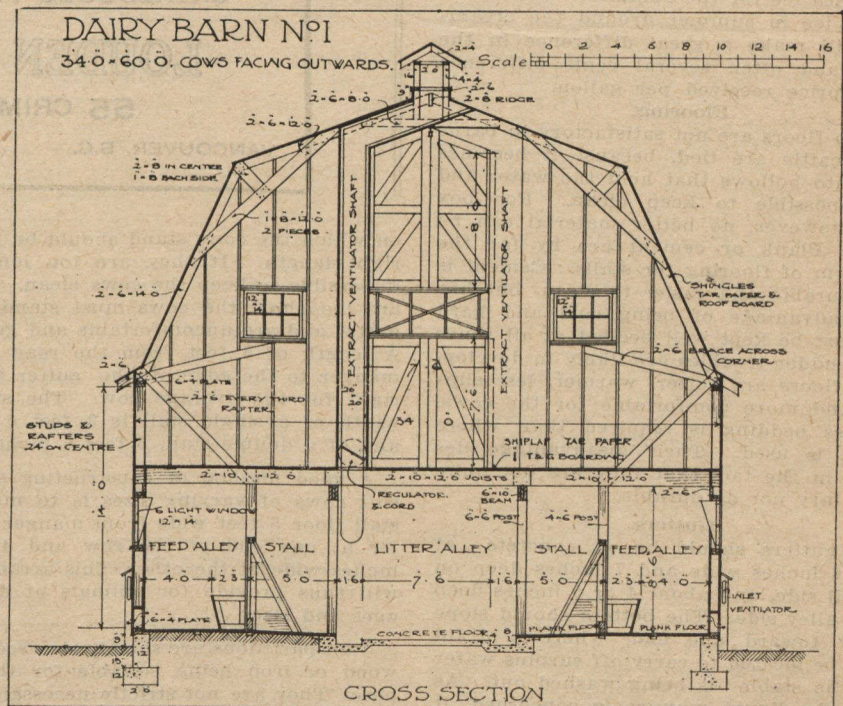
Arrangements of Cows.

The cows may stand either facing in or out. Some prefer one way and some the other. If the cows face the walls there will be a manure alley in the middle and a feed alley at each side. If desired, the manure alley may be made wide enough to allow a team to be driven through; in which case the barn would need to be 36 feet wide.

If the cows face each other, there will be

admit of thorough cleansing. Plenty of light should be provided for, as there is no better disinfectant than sunshine, and it is necessary for the health and general welfare of the animals. The cows should be made as comfortable as possible. They should receive the first consideration—not the herdsman. Comfort and convenience for both is desirable, but the cows come first in planning a dairy barn.

be placed near this end of the barn, and also to the feed-room. Provision is made in the feed room for good-sized feed-bins, ample floor-space for mixing feeds, and a stairway to the loft. If a silo is used it should open into the feed-room from the end wall of the barn opening into the feed room. This will be much handier for general use as an entrance than the big



doors. Its use also helps to keep the barn warmer, because in severe winter weather the opening of large stable doors should be eliminated as much as possible. The large doors of this barn will allow a manure-spreader or a truck wagon to be drawn through the litter alley for removal of manure.

Convenience in Handling Manure.

Cleanliness is of prime importance in the dairy business, and it is necessary that all manure be removed at least once each day. Faulty construction in this respect may make it very difficult to keep the cows clean and entail a large amount of hand-labor. A litter carrier will meet all requirements, or a wide driveway may be provided which will permit of driving a horse and boat or a team and wagon through the barn. In small and medium-sized barns removal of the manure twice a day by a wheelbarrow will be found as good a method as any.

Convenience in Handling Milk.

In a good many dairy barns much unnecessary work is required because no thought was given to the distance the milk must be carried. This point is very important. Not only have the cows to be milked twice a day and the milk carried to the milk room, but large quantities of skim milk must be carried back to be fed to the calves. The carrying of milk alone entails a good deal of labor. If the milk from each cow in a stable of forty or fifty cows is carried 25 feet farther than necessary each day, the additional and unnecessary distance travelled by the milkers in a year would amount to several hundred miles. The same principle applies to the calf pens. Place them where no extra steps need be taken in feeding.

The milk room should be situated on the north side of the stable, either adjoining or not far distant. It should be well supplied with ice for the summer. The use of a little ice in summer around the cream-cans will make a great difference in the grade, and often several cents difference in the price received per gallon.

Flooring.

Earth floors are not satisfactory in barns where cattle are tied, because it becomes worn into hollows that hold the water and are impossible to keep clean. For box stalls, however, no better material can be found. Plank or cement are by far the best form of flooring for stalls. Cement is more durable and easier to clean, but has the disadvantage of being cold and hard and must be kept well bedded at all times or else udder troubles are likely to develop. Plank floors are softer, warmer, less slippery, and more comfortable for the cows, and less bedding is required than where cement is used. Their disadvantage lies mainly in the fact that they are not quite as sanitary nor as durable.

Gutters.

The gutters should be of concrete at least 16 inches wide and 7 inches deep on the stall side, and about 4 or 5 inches deep on the alley side. The bottom should slope slightly toward one end, where a drain should be located to carry off surplus water when the stable is being washed out. As far as the liquid manure is concerned, it will be readily absorbed by the litter if cut straw or chaff is used freely.

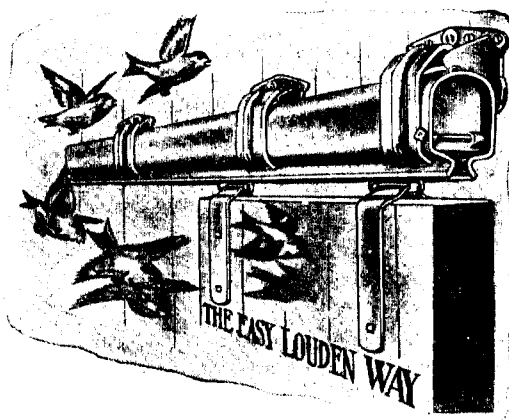
Mangers.

Either wood or cement may be used, the object simply being to provide a place from which the animal may eat without wasting the food. Tight bottoms that may be easily cleaned are essential.

Stalls.

It is very important that the platform

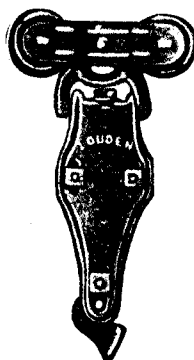
LOUDEN BIRD PROOF



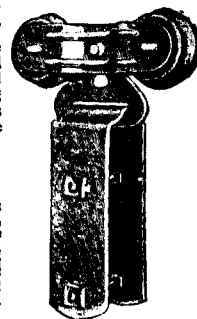
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5

on which the cows stand should be just the right length. If they are too long it is impossible to keep the cows clean. If they are too short the cows must stand in the gutter and are uncomfortable and get dirty. A length of 5 feet from the rear of the manger to the edge of the gutter is about right for the average cow. The standard width of a single stall is 3 feet 6 inches, and of a double stall, 6 feet 6 inches.

A good method of constructing stalls to suit cows of varying sizes is to make the stall floor 5 feet wide from manger to gutter at one end of the row and 4 feet 8 inches wide at the other. This arrangement will thus provide for animals of different ages and sizes.

Stall partitions are sometimes used, either wood or iron being suitable for this purpose. They are not strictly necessary if the cows are tied in swinging stanchions, but when they are tied with chains to the sides of double stalls a partition between each double stall is required. They need run only far enough back from the manger to keep the animals from hooking each other. Rigid stanchions are sometimes used, but are by no means as uncomfortable as either the swinging stanchion or the chain tie.

TO PREVENT SWARMING

By J. S. Lucas.

To the Editor:—

In your May issue of Fruit and Farm I noticed an article on "Swarm Control." I have had a large experience in all branches of bee-culture and can inform you of two ways that I have found very successful in preventing swarming.

When the bees are getting strong and extra fanners are about the doors, and in most cases the bees cluster outside from lack of room, we know they are about to swarm.

My first method, which is preferable, is as follows: Remove from the hive two of the old combs having least brood. Cut out all the queen cells but one. Place two new racks with full sheets of foundation in centre of hive and one or two days later put on a super (sections or racks) with full sheets of foundation. Ventilate so as to cause a current of air to pass over the lighting board by raising hive about four inches, if in warm weather. This will drive the bees up to the super. If the nights are cold it will keep extra nursing bees employed looking after the brood, so that in a few days swarming fever will be over.

My other method is to remove rack with queen and bees thereon from hive. See if there are any freshly laid eggs in the

hive or rack removed. If there are some in the hive the bees will form from them a new queen. If there are none in hive or rack place the rack with brood queen and bees thereon in an empty hive (placed some distance away) with four racks of full foundation, having two on each side of brood. It will now be necessary to supply the parent hive with a new queen. This may be done as follows: If the bee-keeper has any fresh eggs in another hive he can place them in this hive, if not, let him wait about five days and then look in the hive in which the old queen was put. If eggs are laid shake the bees off and put the rack back into parent hive and by the time the bees have raised a new queen from the eggs their brood will be hatched. As soon as the eggs are put in the hive put a super on to give room for the bees when hatching. The old queen will start a new colony and with a little help from the bee-keeper will make a good stock going into winter.

Yours respectfully,

J. S. LUCAS.

Glasgow Ave., Maywood, Victoria, B.C.

Correspondence

WINNING INDEPENDENCE ON A PRE-EMPTION.

By Chas. A. Barnes, Shushartie Bay.

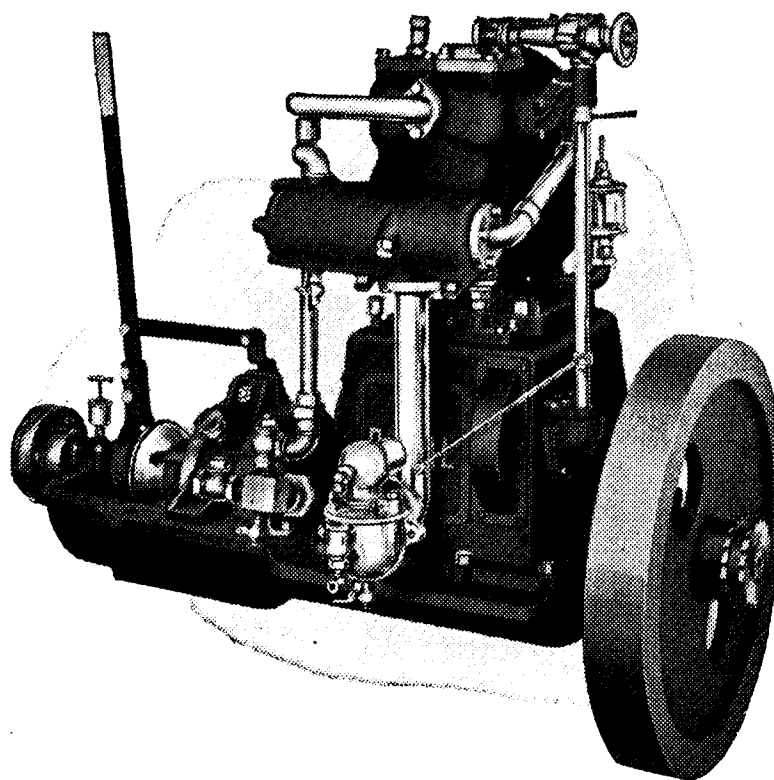
Judging from the enquiries which have come to hand as a result of the publication of the article "Charcoal, Manures and Pre-Emptions," there are many persons who are desirous of taking up a pre-emption, but are deterred by a lack of experience and doubt as to what to do, and whether they can do it. It is a difficult matter to answer these enquiries individually, and fully, and so I thought an outline of what a pre-emption can expect, would be acceptable.

In the first place you can hardly expect a free gift of 160 acres of land with a railway station on the property; in other words you will probably have to depend on packing in all your own supplies and generally on your own back. Under present conditions it takes me four or five hours to go to the wharf at Shushartie, get my pack of about 70 pounds and come home again. I will here say that practically the whole of Township 24, Rupert District, is open for pre-emption and several quarter sections are as near the wharf as my own; and also don't apply for a pre-emption until you have seen it and so save disappointment—you would hate a location on a mountain peak.

In taking up land you need a few hundred dollars to keep yourself going for the first year; the second year you can live so cheaply you need very little cash—a few fowls will keep you going or you can, if you prefer, get a job for a couple of months locally—perhaps on road work, but I depend on my poultry, it means more packing but the manure is well worth the labor, as it means plenty of all kinds of vegetables, etc., while on this point let me say "only have the best egg-laying strains you can get and keep them up to the original standard. You don't want any lazy ones when you have to pack in their food.

Now as to transportation and schools, you can't expect these to come before the settlers, but when there are a certain number of settlers, who are doing their bit "on the land, not the waterfront," then we can reasonably expect a road which will bring us within three and a half or four miles of the wharf and render transportation easy, and again for a year or two only a pack trail is needed as you will be sometime be-

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fore you have any bulky crops to sell, but it is up to the government to at once put in a better trail than any of the three existing ones.

I would say if you are tired of town life, or tired of working for wages six days out of seven, and doing chores on the seventh, take a chance on it; you don't stand to lose much, and then you are doing a big "bit" for the empire by turning an unproductive and desolate country into a fertile one. You are also doing a big bit for yourself as well, for the land is fertile and will undoubtedly increase in value, but in my opinion the most important point is—while you work for wages are you making any satisfactory provision for the time when you will be told you the "too old?" You may be doing well enough now, but how about later on?

On a pre-emption a poor man can in a few years win his independence for life. The final result is only limited by his individual energy and determination. Is not this world worth while?

ADVANCES TO SETTLERS

To the Editor:

In your May issue you printed an article on the above subject written by Mr. A. Lucas, M.P.P. I only arrived here this month from New Zealand, having resided in that Dominion for 37 years. I have not a word to say against the Advances to Settlers Act, as applied in New Zealand, but Mr. Lucas' article gives the reader the impression that the prosperity of New Zealand is almost entirely the fruits of the adoption of the Advances to Settlers Act. According to the New Zealand government statesman our exports per head of the population was \$68 in 1894 and \$104 in 1912,

not \$30 in 1894 and \$111.70 in 1912, the figures in Mr. Lucas' article.

The best authorities claim that prices in European countries rose from 1850 to 1873 and fell from 1873 to 1895, and have risen since. One of these authorities shows a rise in foodstuffs from 93 in 1895 to 108 in 1910. The Board of Trade shows a similar state of affairs, but none of these countries had adopted "Advances to Settlers Scheme." As New Zealand products advanced in price at a similar ratio, it is quite reasonable to conclude that New Zealand products would have hardly shown any difference in value if there had been no such Act as the one under consideration. In 1895 our wool cheque was \$10,310,655. By 1912 it had nearly doubled. Our frozen meat cheque for 1895 was \$6,313,555; in 1912 it was \$19,547,845. Butter in 1895 brought in \$1,128,005; this had increased nearly ten fold in 1912. Cheese brought, in 1895, \$754,455; in 1912 our cheese cheque was \$8,401,965.

Before the Advances to Settlers Act came into operation certain government departments, particularly the Life Insurance Department, was lending money on mortgage on freehold security, at about five per cent. on long terms, which could be extended without legal cost to the borrower. It is often argued that it was the Advances to Settlers Act that brought down the percentage on money. And that the big banking concerns, and loan companies had been making exorbitant profits. But this is not borne out by facts, as in the early nineties the banking institutions and loan companies were in a bad way. One banking concern with branches in most of our cities had to close its doors, and one leading banking institution was only saved from a similar fate by the government in a special all-

Production and Thrift

"TO win the war with the decisiveness which will ensure lasting peace, the Empire will require to put forth its full collective power in men and in money. From this viewpoint it is our true policy to augment our financial strength by multiplying our productive exertions and by exercising rigid economy, which reduces to the minimum all expenditures upon luxuries and non-essentials. Only in this way shall we be able to make good the loss caused by the withdrawal of so many of our workers from industrial activities, repair the wastage of the war, and find the funds for its continuance. It cannot be too frequently or too earnestly impressed upon our people that the heaviest burdens of the conflict still lie before us, and that industry and thrift are, for those who remain at home, supreme patriotic duties upon whose faithful fulfilment our success, and consequently our national safety, may ultimately depend."—
SIR THOMAS WHITE, Minister of Finance.

**PRODUCE MORE, SAVE MORE.
MAKE LABOUR EFFICIENT.
SAVE MATERIALS FROM WASTE.
SPEND MONEY WISELY.**

LET US PRODUCE AND SAVE—

The war is now turning on a contest of all forces and resources—men, munitions, food, money. The call to all is to produce more and more. It may be necessary to work harder. The place of those who enlist must be taken by those at home, men and women, old and young. The more we produce the more we can save. Produce more on the farms and in the gardens. Save more and help to win the war.

LET US NOT WASTE OUR LABOUR—

In this war-time all labour should be directly productive or should be assisting in production. Make it as efficient as possible. If your labour is on something that can be postponed, put it off till after the war and make your labour tell now. Making war is the first business of all Canadians. Efficiency in labour is as important as efficiency in fighting.

LET US NOT WASTE MATERIALS—

Begin at home. The larger portion of salaries and wages is spent on the home—food, fuel, light, clothing. Are any of these things being wasted? \$20.00 a year saved from waste in every home in Canada will more than pay the interest on a war debt of \$500,000,000.

LET US SPEND OUR MONEY WISELY—

Are you spending your money to the best advantage? What do you think of extravagance in war time? Tens of thousands of Canadians are daily risking their lives for us at home. Is it not our duty to be careful and economical? Canadian dollars are an important part of the war equipment. Make them tell. Have a War Savings Account. Buy a War Bond.

THE GOVERNMENT OF CANADA

3

THE DEPARTMENT OF AGRICULTURE

THE DEPARTMENT OF FINANCE

night sitting, passing legislation to back up the bank with a government guarantee. Since then this bank has prospered immensely, so much so that about one year ago it did its best to get rid of its foster parent. But the government objected.

I presume that Mr. Lucas will not claim that the prosperity of the banks in New Zealand are due to the adoption of the Advances to Settlers Act. In order to safeguard the funds, this department has exercised just caution in granting loans. They do not take the owners' valuation, or even the selling price of the land, but the value for which it is assessed for taxing purposes, and then if the character of the would-be-borrower is satisfactory they advance up to three fifths of the assessment value at four and a half per cent. From what I have

gathered the short time I have been here the price of farming land is altogether too high, it being quite impossible for a farmer to make a decent living and get interest on his money under present conditions. Your new department must run their business on a paying basis. In these strenuous times they cannot borrow money but at a high rate of interest, which means high rates to borrow, and the amount advanced must be governed by the productive value of the land, not speculative value.

New Zealand was never so prosperous as at the present time, all our chief products are from twenty-five to thirty-five per cent. higher than before the war. This will mean forty or fifty million dollars more coming into the country this season than any year previously. If this was equally divided it

would mean forty or fifty dollars per head for every man, woman and child in the Dominion of New Zealand. Yours etc.,
J. C. ALPASS.

The heavy frost at Erickson on May 10 did great damage to the peach and cherry crops.

The method now followed by the department of agriculture in distributing bulletins, circulars and reports to members of the institutes is to send a copy to the secretary of each institute who are requested to inform the department as to the number required for distribution to members. This saves much postage and prevents wastage in that members only receive what reports they want.

Farmers of the Delta are still greatly concerned over the supply of grain sacks for the forthcoming harvest. Every effort is being made to secure a sufficient quantity for the season, many people conserving all their second-hand sacks. According to an authority in this connection, the Delta alone will require at least 225,000 sacks this season, this being the number used last year. It is said also that for the whole of British Columbia at least half a million grain sacks will be needed.

Electricity is daily coming into more general use on the farm. Mr. Hope, of Deep Creek Farm, at Fort Langley, has had his place wired and practically everything on the big 600-acre farm, including the hay cutter, grain crusher and milking machines will be run by electricity. He has also had a big pump, electrically driven, installed, a portion of his place being subject to flooding during the annual freshet at the confluence of the Salmon and Fraser rivers.

What the inspection regulations imposed by the provincial government is doing for the potato market of British Columbia is well shown in the case of Chilliwack Valley. During the present season that district, according to a Chilliwack correspondent, has shipped 250 carloads of potatoes. Notwithstanding the fact that these potatoes have been shipped to many widely separated points at home and abroad not a single complaint has been received regarding the quality of the potatoes. This is not only a record but a matter for congratulation to the farmers of the district in question. Such shipments will create a market for Chilliwack that will be an asset of great value to the farmers.

As a result of the potato export business of the past season, largely made possible through the inspection service afforded by the provincial government, huge quantities of "spuds" have been shipped to the United States, Eastern Canada and Australia, and it is believed that possibly 10,000 tons, which otherwise would not have been disposed of at satisfactory prices and the price has been advanced on an additional 35,000 tons. The net increase in returns to potato growers of the province, particularly of the Lower Mainland, due to this export business now in full swing, is placed at between \$300,000 and \$450,000. For the five weeks prior to May 15 cars were inspected by the department and sent forward at the rate of thirty-five per week.

Mr. S. A. Macfarlane, who has lived for 21 years in the Lillooet district, says the crop outlook in his section is very promising. He thinks that apples, plums, pears and apricots will probably reach maturity in satisfactory condition both as regards

quality and quantity. The peach crop will probably not be as good. What the district requires, he says, is a fruit packing house and in this connection there is some talk of Messrs. Swartz Bros., of Vancouver, establishing such this season.

Mr. J. R. Anderson, of Victoria, recently gave some reminiscences of early British Columbia. The period dealt with was the years immediately following 1842 in the vicinity of Fort Alexandria in the valley of the Fraser River. Fort Alexandria, he said, was situated on the Fraser, some little distance below the present site of Quesnel. Mr. Anderson was then between five and six years old, and his father was the representative of the Hudson's Bay Company at that point. There were few white people at the fort, and such as there were spoke French-Canadian for the most part. This was true to such an extent that animals and even individuals were designated by French terms suggesting their characteristics or dispositions. His father was of an agricultural turn, and the developments carried on by him at that time along the lines of farming and stock raising afforded useful indications, even at that very early date, of the agricultural possibilities of the vast interior of the province. He had demonstrated a yield of wheat at the rate of 40 bushels to the acre, and barley was invariably a heavy crop and oats a good yield. During this period from 1,000 to 1,200 bushels of potatoes were annually produced at the fort. In the year 1847 there was a herd there of 27 milch cows. A small mill, the stones of which were but two feet in diameter was brought by boat and pack to the settlement and rigged up in true pioneer fashion to grind the grain into flour. In this connection it was interesting to recount the wonders that were accomplished in these outposts of the empire by means of the augur and axe and a draw instrument fashioned from an old file. It was with these that the natives made all their weapons for the hunt, finishing the roughly-designed arrows by rubbing with grooved stones and then polishing them with shavings.

Nanaimo is considering ways and means of establishing a public market. A delegate has interviewed Deputy Minister of Agriculture Scott on the matter.

The management of the new Cranbrook creamery are pleased with prospects in their district. The following prices were announced on opening: Sweet cream, 38c per lb. butterfat; special cream, 35c per lb. butterfat; and No. 1 sour cream 33 cents. For cream delivered to the door of the creamery one cent a pound above these prices will be paid. Payment will be made twice monthly—on the 10 and 25th of each month.

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PROVIDING AMUSEMENT FOR FRASER VALLEY YOUNG PEOPLE.

By Thos. Wiedemann.

Farmers and settlers generally in the various communities throughout the Fraser valley are carrying out the policy recently advocated in an address by Prof. Klinck, dean of the University of British Columbia, whereby amusements are provided for the boys and girls of the farms. At Ladner, in the Delta a first-class amateur theatrical society stages excellent plays. Bradner, in Matsqui municipality, is the home of the B. A. T. S. (Bradner Amateur Theatrical Society) and at Clayburn, in the same municipality, is another dramatic association which interprets Shakespearean plays in a very creditable manner.

At Cloverdale, in Surrey, a company of amateur thespians stage playlets from time to time, while in Langley municipality a similar organization has been perfected. In Mission municipality is located an excellent organization and in the Chilliwack district several splendid organizations of amateur players occasionally hold the boards at local halls, in fact in practically all the rural communities "play acting" is now the "rage."

The staging of these plays not only provides an evening's entertainment for the farmers, young and old, but also it tends to bring them closer in touch socially. The principal feature, however, is the great benefit derived by the younger set by reason of the many rehearsals. These evenings are eagerly looked forward to and prove a great relaxation after a hard day's work.

Then there are the pleasant anticipations during the days preceding the night of the show and the anxiety as the night of the public performance approaches (for where is there a boy or a girl today that does not have a longing to be a "star" on the stage?) This tends to make the farm work lighter and detracts to a great extent, the mind, from the thoughts of the daily grind so commonly associated with farm work. Latent artistic talent also is unearthed in many other ways. At Bradner and in Ladner particularly some excellent scenery has been painted by amateur artists. At Clayburn splendid costumes in keeping with the various scenes from "As You Like It" and the "Midsummer Night's Dream" were designed and made by the young ladies of the district.

The revenue secured from these entertainments is an important item. During the present war, of course, everything is turned into one or more of the many worthy patriotic funds and in this way, not only is a tidy sum realized, but those taking part and the ones contributing the money feel that they are doing their "bit" at home.

After the war the box office receipts can be used in many beneficial ways, such as establishing a small local library, purchasing a piano for the town hall, uniforming a lacross or baseball team, organizing a band or for that matter, assisting in the erection of a suitable monument to the fallen heroes of the district.

It has been suggested that the various theatrical societies be formed into a Fraser Valley Amateur Theatrical Association, and by co-operation enable the different local organizations to secure properties, material for costumes, etc., much cheaper. Also plays could be exchanged, scenery loaned and matters of mutual benefit discussed and arranged. While this summer very few plays will be staged in the valley owing to the busy planting and harvesting season, it is planned during the coming winter to have a play each month in the different districts.

FINDING MARKETS FOR THE FARMER

A Vancouver Island Man's Suggestion for Aiding the Struggling Rancher.

Mr. J. F. Patterson, Glenshiel Inn, Victoria, is the latest correspondent to tackle that difficult problem of how best to aid the farmer. In a letter to the Victoria Colonist recently he sets forth his ideas of the situation on Vancouver Island as follows, in part:

The chief difficulty the farmer has is to find a market. It is said he should hustle for himself and find one.

On this Island the ranches are small and have not much help in the way of labor. It takes the rancher all his time to look after his stock and farm. He cannot produce and go out after markets at the same time, and do both jobs well.

If you take the time of a few thousand men out getting markets or selling their produce at the public market where there is one, it will total up a lot of time and energy that should be used at home, and it happens to be time and energy that brings very small returns.

In practically all cases on the Island there is more produced than can be used by the family or sold, and in many cases a great deal more. This inclines the rancher to produce less.

My idea is that the government should have a good man, well fitted for the position, who would devote all his time to drawing together all the produce, bring it to one centre, sort, pack and make it ready for the retailer. Do away with the rancher here packing according to regulations. Let him put his produce up so that it will reach the superintendent in good order, graded as best he can. The man with a small quantity of everything is wasting time having to market it any other way. He would then have more time to grow produce and improve his ranch.

The superintendent who handles this produce would first get acquainted with the producing points, get a pretty thorough knowledge of conditions and know as many of the producers as possible. Consult and advise them what to grow and bring his organization into line as circumstances suggest.

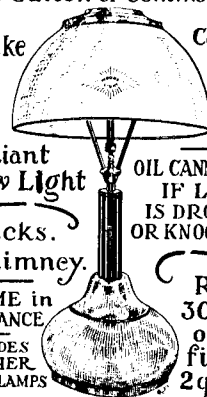
If a manufacturing concern starts up a business, the city he starts in usually gives him certain concessions. The government either has or will put a duty on the goods he will manufacture coming from a foreign country. He does business on a large enough scale to have travelling salesmen. After establishing and organizing his business he can go after markets himself without interfering with his output. He blocks by every means in his power (and he generally has some influence) the importation of the kind of goods he deals in. Yet with all his training and business ability he has to hustle to make good.

The farmer has no protection and no practical help here. He comes full of hope and with more or less money. If he buys a ready-made ranch he pays a high price for it, and with reason, for it has cost a lot of hard labor to get it ready for the plough. He, as a rule, does not know much about the conditions of his market, and the first year grows a quantity of stuff only to find it on his hands. In some cases the only market he has is the general store. It cannot take a tithe of what the district offers, and as a rule only gives credit for it. The result is that a lot of perishables go to waste or is sold at a loss. A great deal of the same kind of produce he had to let go to waste is imported by the wholesaler. The wholesaler is not to blame, as he can-

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not pick up all the odds and ends from the hundreds of small holdings.

Agriculture is the backbone of any country. Given prosperous farmers, everyone else is prosperous.

The main object of government is to govern the interests of the people they represent, wisely. It looks to me as if it would be wise for our government to take hold of this question. It may or may not be the government's work, but it would pay the country well if they did it properly.

It is time old methods that do not work out be done away with. Organization is the only method to make any business a success, and I am sure we hear in these days a great deal about efficiency.

BEAUTIFYING THE SURROUNDINGS

By A. E. Skinner,
Huntingdon, B. C.

Emmerson said that "The earth laughs in flowers."

Who does not enjoy the spring time when the trees and plants of the earth break forth into bud, and blossom, and delight the eye of all that behold. How often we hear the expression used that there is no money in a flower garden, but who has not been at some time or other impressed with their observations, and noticed how dreary and desolate is the mansion, with grounds uncared for, and uncultivated, and then in contrast noted the beauty and enchantment of even a humble cottage, covered with beautiful vines, and surrounded with lovely flowers and well kept grounds.

It is hard to give any specific plan in laying out one's grounds to the best advantage as they vary so much in size and contour. In some cases the ground is covered with a good coat of grass, and others the ground is bare, with the possible exception of a good crop of weeds. Where one has a fairly good stand of grass, beds can be cut in any shape the fancy may dictate, and borders can be dug around the house, or along the path leading to the house, enriching it with well rotted stable manure, if deficient in fertility, pulverizing the ground thoroughly.

As soon as all danger of frost is over, sow such annals as Stocks, Asters, Phlox Drummond, Marigolds, Godetia, Mignonette, Cosmos, Candytuft, etc., all of which will give a good display of flowers throughout the summer and until frost. A good many of these seeds may be sown in pots or boxes, and planted out as the weather becomes warm, and all danger of frost is over. Unsightly fences and outbuildings may be covered, and made a thing of beauty during the summer months by sowing such climbers as Scarlet runner beans (which are not only ornamental but edible), Nasturtium, major, or climbing; Sweet Peas, *Tropeaeolum Canariensis*, and *Convolvulus major*, all of which are easily grown from seed sown in spring. Plants of *Rudibeckia* golden glow, may be utilized to advantage to hide some unsightly corner, it being very easily grown, and attains a height of 6 to 8 feet and blossoms very freely from seed, plants can be readily obtained from florists who invariably carry a stock of all suitable bedding plants. If you care to go to the expense of roses, or shrubs, these can be obtained at reasonable prices at the various nurseries, and I would advise planting same in the early spring as soon as the ground can be worked, the earlier the better, while they are still in a dormant condition. If you desire to grow flowers from roots or bulbs, such as Dahlias, Gladioli, Lilliums, or Montbretias, these can be planted to advantage in the spring. Other bulbs such as Hyacinths, Tulips, Snowdrops, Crocuses, Daffodils, and Narcissus, should be planted in the fall, any time before the frost sets in. In case of a severe winter, a good protection is afforded these by a covering of coarse stable manure, which can be removed in the spring.

In conclusion I feel confident that you will all agree with me that time spent in the flower garden is time well spent.

"In the morning sow thy seed and in the evening withhold not thine hand."

An order for 25 carloads of potatoes was placed in Chilliwack during the middle of May for an eastern firm. The price at which the deal was consummated was stated to be \$20.50 Chilliwack.

THE LARGEST PRODUCING COW IN THE WORLD.

The Holstein-Friesian cow, Duchess Skylark Ormsby, is the new world's champion butter producer. The results of her 365 consecutive days' test, conducted by the Minnesota Agricultural College, show that she milked 27,761.07 pounds, nearly fourteen tons, or over twenty-three times her own weight. The butter fat contained in this year's milk yield weighed 1,205.09 pounds, this being a fat percentage of about 4.32.

Figured at cash value (and the dollar and cents' estimate is one of the prime reasons for the popularity of the Holstein-Friesian cow), and allowing 35 cents a pound, she produced about \$500 worth of commercial butter. Think of it! More than thirty-five 40-pound tubs! The best previous record for the 365 consecutive days' butter test was held by FINDERNE PRIDE Johanna Rue 121083. She produced 642 pounds more milk, but it contained 28.62 pounds less butter than the amount accredited to the new champion.

The new champion butterfat producer was born October 31, 1909, and freshened at the age of five years and three days. Throughout the test she never missed a feed, never required services of a veterinary, and was never fed anything but ordinary commercial cow feeds.

Certainly this wonderful "Black-and-White" cow shows an attractive profit on the year's ledger account, for to her production of \$500 worth of commercial butter must be added the enormous amount of skim milk and the value of her calf. It is an achievement which will greatly please all lovers of Holstein-Friesian cattle.

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For the price of a ten-cent smoke a day—this saving would purchase a \$2000 policy in the Mutual Life of Canada—at age 30.

Insure with Canada's only mutual, where you get the largest amount of insurance for the least possible outlay. Send me your name and age; will gladly mail you full information. You'll have no regrets for doing so.

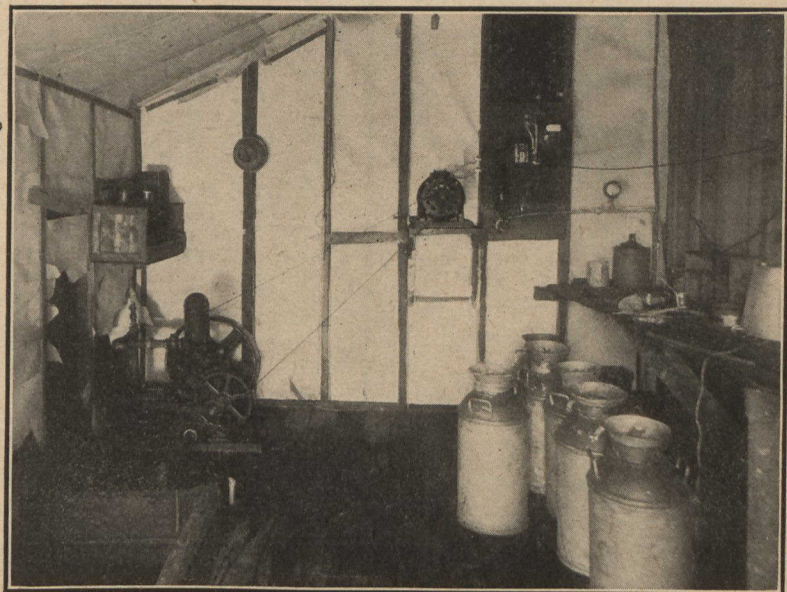
William J. Twiss,

District Manager

MUTUAL LIFE OF CANADA

317-320 Rogers Building,

VANCOUVER, B. C.



—Courtesy of the B. C. Electric

One-horse power motor on farm of Mr. Charles Evans, Sardis, operating water pump for cooling milk, washing floors, etc.

BIG DAIRY FARM.

Mr. P. M. Hansen, of Big Valley, Alberta, has purchased the 80-acre farm of Mr. Nash at the boundary near Patricia, and will operate a dairy and stock farm.

ELECTRICITY ON FARM.

The picture films and slides shown at New Westminster were shown here on Mon-

day afternoon by the British Columbia Electric Railway Company, by which the many uses of electricity on the farm were set forth. There was a fair attendance and the information given by Mr. Geoffrey Porter, chief electrical engineer of the company, was much appreciated. The pictures were shown under the auspices of the Chilliwack Board of Trade.

Breed More Cattle

By John Bright, Dominion Live Stock Commissioner.

A very competent authority estimates that, having reference to last year's trade, average prices current for beef on the Smithfield market in London, England, for 1915, show an increase of 40 per cent, since the outbreak of the war. The last English produce report to hand quotes Irish beef at 19c to 20c per lb. for sides wholesale and English at 20c to 21c per lb., as against a price of 15½c to 16¼c for Irish and 15¾c to 16¾c for English, during the last week in December, 1915. It further quotes South American chilled fore-quarters at 16½c and hind quarters at 19¾c, as against 12½c and 16 respectively for fore-quarters and hind-quarters in December. "Supplies of frozen beef are practically exhausted, only a few small odd lots of bull beef being obtainable. These, in view of the strong demand ruling for all classes, realize high prices. The absence of frozen supplies has again forced buyers on the chilled article, with the result that values have advanced sharply."

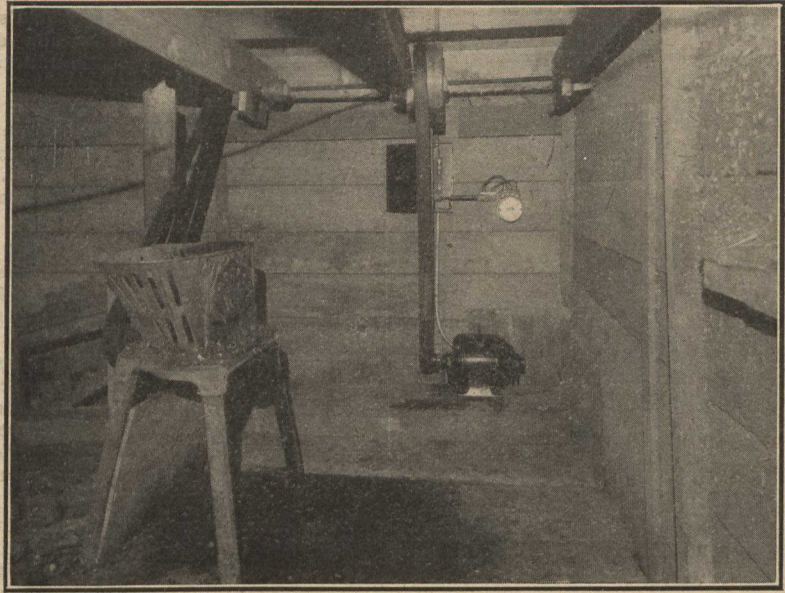
The general beef situation, from the standpoint of the home and foreign market, further emphasizes the shortage of supply. One feature is particularly noteworthy. It has never been indicated from any country that there is an undue accumulation of beef in storage or a congestion of cattle going forward to market. Present prices and present demand fully confirm this fact. The position in Europe is well known. The Argentine output has been absorbed for army supply to such an extent that very little frozen Argentine beef is available for civil consumption in Great Britain. Australia has passed through a severe season of drought and her exportable surplus has been greatly diminished. Moderate supplies of cow beef are going forward from New Zealand but these are not of first-rate quality. Canada and the United States have not appreciably increased their cattle population and are clearly able to find a remunerative market in Europe for any of their product available for export. The steady and continuous rise in price definitely reveals the condition of the world market for beef and emphasizes the fact that the situation is growing worse with the progress of the war.

Contrast the position with respect to grain. Enormous stores of wheat are tied up in Russia. In Siberia alone it is estimated that there is an accumulation of over 9 000,000 tons of grain. Until peace is declared, this accumulation will probably become more pronounced. After the war, the production of grain will again be undertaken on an enormous scale in all the contending countries. In view of this fact and with the release of the accumulated stocks, it is undoubtedly true that grain will then drop in price to a very considerable extent. With an overstocked grain market and a pronounced under-supply of cattle the farmers of Canada should have little difficulty in making up their minds as to what their policy shall be for the future.

One warning, however, should be given. We must emphasize quality before quantity. On the British market, Canadian beef does not equal in quality the beef exported from United States or from the Argentine. Unless we can improve our cattle, both as regards quality and as regards finish, we need not expect to be able to affect sales at Smithfield but shall be obliged to seek a market in France or Italy. Even our best grass fed cattle, when offered on the Chica-

go market last year, yielded disappointing returns. In Canada there is any number of good beef cows but we can never develop a beef trade by breeding these to dairy bulls,

to grade bulls, or even to pure bred bulls of inferior type. A really good pure bred sire is an asset to any community. He should
Concluded on page 963



—Courtesy of the B. C. Electric
Two-horse power motor, operating root cutter in root cellar of Mr. Chris Brown, East Delta. This picture was taken with the aid of a 1000-watt nitrogen filled tungsten, giving 40 seconds exposure. The double walls of this cellar are filled with straw to keep out frost.

Solve the Feed Problem

Dried Brewers' Grains

IF YOU USE ROYAL BRAND—Dried Brewers Grains in conjunction with your other stock food you will get better results at a lower cost. Many FARMERS are using ROYAL BRAND DRIED BREWERS GRAINS to advantage. Why not you? Order a trial ton today and we are sure you will be pleased with the results.

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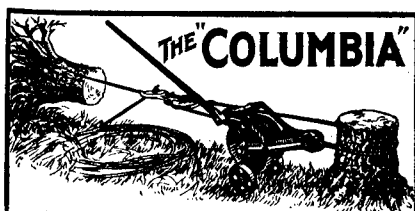
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COLUMBIA BLOCK & TOOL COMPANY.

Vancouver, B. C.

The Trail Poultry Association will hold their annual poultry show between November 22 and December 8 next. Mr. R. S. Day is show secretary and Mr. P. Floyd superintendent.

Beekeeping in B. C.

Continued from page 952

GOOD COMBS AND THEIR VALUE

The modern Langstroth hive contains ten frames, these ten frames are filled with comb, or should be:

Now, if the comb contained in the frames were all good worker comb, and the queen utilizing all the frames, somewhere in the neighborhood of 55,000 bees would be brought on the stage of action in about six weeks, as it would take the queen about twenty days to lay that number of eggs, supposing her to deposit them at the rate of 3,000 every 24 hours, and by the time she completed the circuit the first eggs would be ready to hatch, so that she could turn back and start in filling the cells again. But unfortunately the combs are but rarely built to the bottom bars of the frames, and in many cases all the frames are not even two-thirds filled with comb. So instead of 55,000 cells being available for the queen we generally have about half that number for the upper portion of each comb usually contains honey and pollen with which to feed the larvae. We have been assuming all the comb to be worker comb. If we deduct about one tenth for drone comb, which is a very low estimate for the average hive throughout the province, our figures are again reduced. This goes to show that good combs in a hive are a very valuable asset. If starters only are used in new frames the bees build combs to suit themselves and a lot of drone comb is the result, which is a very expensive luxury in a hive, as a drone is a large consumer and does not produce. Oftentimes it is possible to cut out the big patches of drone comb, but the bees have a tendency to build it in again. The safest way is to take out the comb and put in its place a frame containing a full sheet of worker foundation wired in. The drone comb can be used in the super above the queen excluder, as it is just as good as worker comb for storing honey in. By eliminating the drone comb as fast as possible and replacing it with full sheets of foundation, a larger force of workers is obtained and consequently a large crop of honey.

Sometimes bees will gnaw down the foundation and build drone comb in spite of everything, but if foundation is given to them in the honey flows, when wax is being secreted freely by the young bees, good results are usually obtained. Enough foundation to fill ten frames costs about \$1.25, and is money well spent. If we consider the time saved by the bees in making the same amount of wax, not to mention the honey consumed in the process, which amounts to between ten and fifteen pounds and also the certainty of having the maximum of worker bees to the hive.

JOHN BROOKS.

Two members of the Beekeepers' association have enlisted for active service, Mr. David Farlow having joined a Vancouver regiment, and Mr. J. Robinson, a director, is now at Borden camp, England, with the 67th. He writes: "We are getting pretty stiff drill all the time. I have been looking round for the busy bee, in my little leisure, but have not seen any. There is one thing here, we do not get in B. C.; that is the song birds. Be sure and look after my bees." Other members are looking after the bees while our friends are away, and I am sure they will act the part of the good steward. After all what is the good of an association, if not for mutual helpfulness?

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POULTRY SECTION

TELLING THE LAYING HEN

By Michael K. Boyer

To make a success, it is imperative that we know our hens. We must test their abilities. We cannot afford to keep drones.

Therefore, we must adopt some method by which we can determine the good from the bad. Noticing a hen repeatedly upon the nest is not a guarantee that she is about to lay. In using trap nests I have almost daily captured hens on the nest, but no eggs, and their annual records were very low.

Every time a hen cackles when coming out of the laying room is no criterion that she has laid. I believe it was Collingswood who once said "a cackling hen is either a layer or a liar," and in using trap nests I have found quite a number of these cacklers to be "liars."

So, prior to the adoption of trap nests, the selection of layers has been more or less guess work. It was said by some writers that "spare and leggy birds are the best layers." This opinion, no doubt, was based upon the fact that the Mediterranean class is built after that fashion.

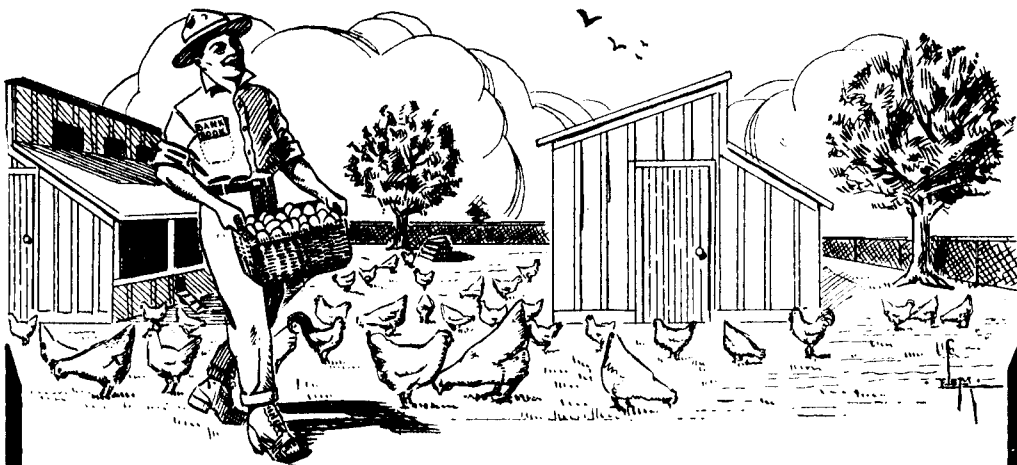
This view was corroborated by the late Francis A. Mortimer when he said that he found that hens with short legs, chunky bodies, short necks and small heads, are, as a rule, indifferent layers. This would seem so from the standpoint that such hens are more of the meat order, but trap nests have told us that during the past few years our chunkiest Wyandottes were in the front row of layers.

Felch said the pullets that commence laying earliest in life are the ones to lay the largest number of eggs through life. There is some logic in that, but we cannot always tell our earliest layers if we have no system of trapping them.

Some years ago there was quite a discussion of the so-called "egg type." Nearly all these opinions were based on the style of the Leghorn, but some writers differed. For example, one writer said that good layers have a "long, slim body, are broad across the shoulders, are triangular, deep in front, not compact, and have legs of good length." Another differed by saying: "Carefully avoid the leggy, high built, reared-up hen of the gamecock style. It is the short-legged, heavy-set, motherly-looking hen that shells out the eggs." Many references could be given on this type question, but nearly all differ in some particular, but the opposites, quoted above, are fair samples of representations made in the early days.

There is but one sure way of finding out which are our workers; we must catch the hens in the act. Each hen is known by the number on the band or ring that is placed on her leg. Catching the hen in the trap nest, her number is ascertained, and this marked on the egg. Each evening, after the eggs are gathered, these numbers are properly credited on a record blank provided for that purpose. At the end of the year we know for a certainty how many eggs the hen has laid. Not only that, but we also know the size of her egg—whether normal or not—and the color, whether white, brown or tinted.

I do not, however, employ trap nests solely for the purpose of finding out which are my best year-round layers. What I care most to know is which are my best cold-



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DON'T FEED CHEAP FOOD; don't "take it out of the chickens" that way.

GIVE THEM ROYAL STANDARD CHICK FOOD, containing the highest percentage of protein, the food element for building bone, flesh and strength.

Positively will not "scour" young chicks.

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weather layers. I want to know which are the profitable workers during the late fall, winter and early spring, times when eggs bring the best prices. It is not a question with me how many eggs a hen lays in a year, but how much money her product brings. If it is possible to concentrate the bulk of her crop in six months of the year, when prices are high, and induce her to "take it easy" during the warm months, devoting the most of that time to broodiness and moulting, I will have stronger and harder stock, and, consequently, more profit.

In conclusion, let me state, there is but one guaranteed way of determining our profitable layers, and that is by the aid of trap nests, and no poultryman can afford to do without them. It will mean a profit in the crop, and a saving of feed, room and labor.

FRUIT AND FARM POULTRY POINTERS Michael K. Boyer

While it is best at all times to have good, sharp grit constantly before the fowls, it is especially important that grit be supplied when feeding whole oats so that the hulls of the oats, which are very tough and unyielding, will be properly ground. With plenty of sharp grit there is no danger attending oat feeding, although the safest rule is to first soak the oats for an hour in water so that they may become more softened.

Green bones are bones fresh from the butcher, with the adhering gristle, meat, etc.

The sooner farmers recognize the fact that poultry culture should be followed along the same line as dairying—giving food and care to secure results—the sooner will they begin to reap their share of profits and become competitors with practical poultry raisers.

Green bones contain the natural juices as well as the adhering substances, making it superior to the bones that have lain on the ground for a while and lost all the natural juices or animal matter. Green bones are also more soluble and capable of having the mineral matter digested.

In parts of England, turkeys are fattened chiefly on Indian corn, scalded Indian meal and boiled potatoes, with home grown corn for a change.

It is claimed that the most delicious, juicy broiler that an epicure can fancy is a turkey poult of about six pounds, or when about two-thirds grown, and of medium size. Many a young male two-thirds grown would be too large to broil. If rather large, however, the breast may be gashed, and thus more easily cooked through, but it must not be dried.

The following facts on marketing turkey feathers are well worth remembering: The quills from the third joint or tip end of the wing are called pointers, and should be kept separate. In packing, keep tail and wing feathers separate. Tie each kind in bundles by itself, and press the bundles in the boxes tightly. All feathers must be clean, sound and dry-pinked. The wing quills which have full plumage on both sides of the quill, which come from the first and second joints of the wing next the body, are more valuable than, and should be kept separate from, the pointers. The tail feathers should be kept by themselves, and are the most valuable. The short tail and wing quills, if saved, should be kept separate from the long ones, as they depreciate their value if mixed with them. The directions for shipping are to mark the correct weight and tare on the boxes, also the name of the shippers, and ship as "turkey quills."

"Utility" does not mean "mongrelism" any more than "thoroughbred" means "standard-bred."

The old way of carrying fowls by their legs, or by the wings, is not practised by the present-day poultrymen. It is a cruel practice. Holding the fowl firmly by the legs and allowing the body to rest on the arm is a much better method.

Fowls are obliged to throw off much of the waste of the body through the lungs, they do not sweat in the sense that do other animals, but instead breathe several times faster than sweating animals when heated. To keep in good health a hen requires nearly seven times the amount of fresh air in proportion to its size as does a horse.

There is almost as much difference between different families or strains of each breed, as between the different breeds. Therefore, receive with some allowance the praise or condemnation of any breed.

In Paris markets the eggs are dated, and one pays according to the freshness, so that it is possible to be certain of newly-laid eggs; or, it is necessary to be economical, yesterday's eggs, or the day's before, are offered at a reduction.

JUNE POULTRY POINTERS

By F. C. Elford,

Dominion Poultry Husbandman

Practically all hatching should have been completed last month, though in the case of Leghorns if there is plenty of room for the growing chicks, another batch may be brought out this month; the chicks, however, will never make breeders.

Broilers:—If early cockerels are ready for marketing as broilers this month sell them, also the "green" ducks. Dispose of all birds that will bring a good price this month.

Sell the hens:—Now is the time to market the hens; they will bring from two to three times more now than they will next fall. Sell also pullets which you do not intend to breed next season; this gives more room for the chicks and means better prices for cockerels next fall.

Turkeys and geese:—The young turkeys and geese will demand care this month as well as the chicks. The geese are not very difficult to raise, but it would be well to put a little extra care on the turkeys. Keep them growing well, give them a good range on sweet land, keep the premises clean, and turkeys, as well as all other growing stock, free from lice.

Breed More Cattle

Continued from page 960

have the patronage of all the farmers in the neighborhood. The maintenance or use of a scrub bull, under the present circumstances, should be deemed an unpatriotic act.

One other non-progressive practice should be eliminated or, at least, superseded by a better one. Reference is to the sale and purchase of stock and feeder cattle, whether for finishing in the stable or on grass. In the case of the former who sells, this practice, unless in exceptional circumstances, is a mistaken one. He should feed and finish his own stock. On the part of the farmer who buys, a speculative and non-productive enterprise is continued and encouraged, which has neither an economic nor a practical argument in its favor. He should grow his own feeders, or a part of them at least. Trading of this nature has done as much as any other one factor to destroy the beef cattle industry in many parts of Canada. It can be built up by a change of system.

A good herd of milking cows will bring in a return as regular as the change of the seasons. If labor is not available to milk all of them, two calves may be put on a single cow, possibly followed by a third, and better calves reared than if fed by hand. The feeding of these calves until fit for market, whether as baby beef or as butcher or export stock, will insure a stadier income than can possibly be obtained by the continuance of the old methods. No practice will so tend to conserve female stock nor so speedily and steadily add to our available supply of beef.

DRINK WATER FOR TONIC AND YOU WILL BE HAPPY.

Use It at Meals and at Other Times, Advises College Physician, but Be Sure It's Pure.

Water taken as a tonic assures a happy disposition, a clear complexion, a good appetite, and a liberal amount of "pep," in the opinion of Dr. R. T. Nichols, physician in the Kansas State Agricultural College.

"The average person does not drink enough water," says Dr. Nichols. "Water may be taken at any time by the average person without injury to the system. Old physicians have advised against drinking water at meal times. Their theory was incorrect as no harm can result provided one does not wash down the food.

"Water stimulates the kidneys, the bowels, and the pores of the skin. A good digestive system is almost an assurance of perfect health. Pure water is a tonic for this system, and moreover is the best tonic a person can take.

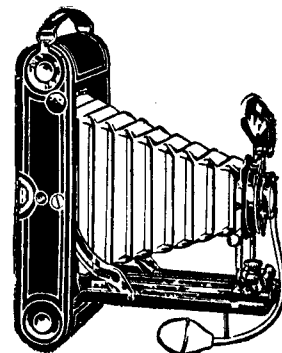
"Ice water should not be drunk by the healthy person no matter how hot the day, for its temperature is too far below that of the body. An athlete should not drink water just before or after a contest. Water taken on an empty stomach cleans out the digestive tract and prepares these organs better to digest the food.

"There is such a thing as taking too much of nature's tonic. An excess of water overworks the excretory organs just as does an over-dose of prepared tonic.

"The source of tonic water should be tested several times a year. Although water is the best of tonics it may carry the worst of germs. Always be sure drinking water is pure."

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WHITE and COLUMBIAN Wyandotte, Light Brahmans and S. C. White Leghorns. Over thirty years a breeder. Stock and eggs for sale.
MICHAEL K. BOYER,
Box M, Hammonton, New Jersey.

When the Indian Runner duck has reached a marketable age, she has nearly completed her growth, and has little left to do but complete her plumage and begin to lay.

It takes about two weeks to fatten a duck for market.

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.)

The spring has been a very trying one to the gardener and many things have had to be done over again owing to cold rains and even snow and frost in some parts. Tomato plants set out the middle of May had a very rough time and in several cases to my knowledge had to be replanted; it is not too late yet to replant those provided good plants can be obtained.

There is a popular belief in some compensating law regarding the weather so I trust that the summer will make up for the deficiencies of the spring.

There are a host of things to be done just now so that time does not hang on the gardener's hands. In the vegetable garden, weeds will be troublesome and will require constant hoeing to destroy; this hoeing serves the double purpose of aerating the soil which is just as important as the destruction of the weeds. You have all noticed the quick jump growth takes after the surface has been loosened and a freer access given to the air. This is due to the fact that air is required by roots as well as leaves, and also by the minute organisms in the soil which prepare food for your plants.

Thinning of the various vegetables must be attended to, usually as soon as the first true leaves are made. Here are the distances apart to thin the chief garden crops: Beans, dwarf, 4 inches; beet, 4 inches; carrots, early, 2 inches; carrots, late, 4 inches; lettuce transplant, 12 inches each way; onions, spring sown, 4 inches; parsnip, 6 inches; turnips, early, 4 inches; turnips, main crop, 6-8 inches; sweet corn, if sown in hills thin to 3 plants per hill, if in rows thin to 8 inches apart; squash, pumpkins, citron marrow, thin to 3 plants per hill and train the vines to radiate from the centre.

It is time now to quit cutting asparagus. The first sowing of peas ought to be ready to pick pretty soon and the asparagus won't be missed. Give the beds a dressing of common salt, 2 ozs. per square yard, and a good soaking of water if at all dry; upon the growth made this summer depends your next spring's crop so don't neglect it now that it has served you so well.

Attend to the staking of green peas as occasion demands and draw a little soil up to the necks of the young plants before putting in the stakes; the rut made on each side form a good irrigation channel when applying water during dry weather. Peas require abundance of water and the crop will be greatly improved both in quality and quantity and the much dreaded mildew warded off if kept well supplied with moisture. The last sowing of peas may be made about the end of the month, sowing rather deeper than usual to make sure the seeds are in contact with moist earth. Sow also another row of kidney beans so that this esculent may be in season as late as possible. Plant out the main crop of celery, taking particular care that the crop is

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½ pint 45c; 1 pint 70c; 1 quart \$1.00; ½ gall. \$1.75; 1 gall. \$3.25

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well supplied with food in the shape of well decayed manure and that it never suffer for want of water; one severe dry off is sufficient to ruin the whole crop by causing it to run to seed, a natural impulse on the part of the plant to reproduce itself before death.

A watchful eye must be kept for pests of any kind especially for the cabbage and onion maggots. Prevention with these pests is much better than cure; in infected districts cruciferous plants like cabbage should always be given the protection of tarred paper discs. For the onion maggot spray the tops of the plants and the surface of the soil with a spray made by thoroughly emulsifying three pints of coal oil and half a pound of soft soap in 1 gallon of boiling water. To emulsify, switch rapidly for a few minutes in a bucket until there is little or no free coal oil floating on top. For use, add 6 gallons of soft water and keep frequently stirred when using. In dry weather the effect of this spray will be good for about ten days when it will have to be repeated; in showery weather it will have to be applied oftener. As several generations of onion flies are produced, this spraying to be effective must be continued right through the summer. Leeks are an excellent winter and spring vegetable when greens are scarce, and may be planted out now on well manured ground; plant with a dibble 10-12 inches deep leaving the hole open to allow the plant to develop.

In the fruit garden strawberries will be approaching ripeness, and to secure nice clean fruit the beds ought to be mulched with clean straw or some such material. To get the best of the crop see that it never suffers for want of water.

Keep a careful watch on fruit trees for

green aphid, and on their first appearance spray with quassia extract and soap; here is how it is made: Simmer or gently boil 1 pound of quassia chips (obtained at drug store or seedmen's) in water for a couple of hours. Dissolve half a pound of soft soap in warm water, and stir in the strained off quassia extract, adding sufficient water to make up to ten gallons. This is what is termed a contact insecticide and to be effective must be forcibly applied to every part of the tree to make sure that every insect gets a dose. The writer has used the above spray for over 20 years and has not discovered anything to beat it yet. In the flower garden this is the time to prepare for next spring flowers by sowing seeds of wallflower, pansy, forget-me-not, canterbury bells, etc.; sow in a cool shady spot and transplant to nursery rows when large enough, planting in their flowering quarters, in fall or spring.

Most of the hardy annuals sown last month will be well up now and must be thinned out at once. The difference between crowded plants and those given sufficient room is well worth striving for. A mental picture of a well developed plant of the kind in question ought to be conjured up and thin accordingly.

Keep a sharp lookout on roses of all kinds for pests; should green aphid appear use the quassia spray recommended above, and practice hand picking of leaves infested with the leaf roller.

In warm weather the garden hose applied every evening will do much to keep your plants clean and healthy, not a mere sprinkle mind, but applied with enough force to dislodge aphides. Where rose blooms are wanted for exhibition, disbudding ought to be practiced; on each shoot



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it will be noticed there is usually one large bud on the tip called the terminal bud, surrounded by several smaller ones called lateral buds; and in order that the terminal bud may develop to the utmost all the laterals ought to be rubbed off whenever they appear; but when it is easily to be seen that the terminal bud is going to be too early for a certain date them it must be rubbed off and a lateral taken in its place. This lateral will not develop into quite as large a rose as the terminal would, but you will have the satisfaction of having a bloom to place on the show stand you would not have had otherwise.

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

SOME TROUBLESOME PESTS

And the Way to Deal With Them So They Will Not Bother.

The little black fly, which is the parent of the pear and cherry leaf slug, deposits its eggs, one in a place, just beneath the epidermis of the upper surface of the leaves. Where each egg is laid there is produced a very distinct brown spot about the size of a small pin-head, which is readily seen with the naked eye.

Remedies—Any time after the eggs have been laid, and before the slugs have become nearly full grown, the injury to the trees may be almost entirely prevented by spraying them thoroughly with arsenate of lead, in water, in the proportion of two pounds of the poison to each fifty gallons of water. The spray should be applied to the upper surface of the leaves in such a way as lightly to cover them on all parts of the tree.

If the application is not made until the cherries are pretty well grown, it is advisable to use white hellebore instead of the arsenate of lead, applying it in the proportion of one ounce to each three gallons of water. This poison is best applied toward evening.

Foot Notes.

Go over the rose bushes often and see that no slugs or leaf-miners are working on them.

Look over your spraying machinery; polish up the rusty parts; replace broken or missing parts.

Indications are that spraying compounds will be higher in price later in the season than they are now.

Watch for potato beetles. Picking the old ones as they appear lessens the crop (of bugs) later in the season.

For plant lice (aphis) on cabbage plants, rose bushes, etc., use the following spray: Two tablespoonfuls of black leaf tobacco extract, ordinary laundry soap, one-half bar; water, four gallons.

SPRAY WITH PHYTOPHILINE

The Great Non-Poisonous Insecticide and Plant Tonic.

The best all-the-year-round spray for all insect pests and fungous diseases, including caterpillars, slugs, aphid, mealy bug, woolly aphis, white fly, scale, ants, leaf curl, worms, thrip, mildew, rust, etc., etc., on Fruit Trees, and bushes, Roses, Indoor and Outdoor Plants, Vegetables, etc., and also for Vermin on animals, and for moths, wasps, etc. Absolutely safe to use and a splendid tonic for plant life. Special booklet with testimonials, etc., on application. GRADE 1 for general use for insects on plants. GRADE 3 for mildew, rust, red spider, and mealy bug on plants, and also for vermin on poultry and animals, and their houses, and for moths in furs, etc. Postpaid prices. 55c, and double sizes 85c, \$1.55 and \$2.80. CASH WITH ORDER. All leading florists, or from PHYTOPHILINE, DISTRIBUTORS, 1493 SEVENTH AVENUE WEST, VANCOUVER, B. C. Agents wanted everywhere. SPRAYERS for Phytophiline. Special mist sprayer, 90c postpaid. Also the famous "Florists' Friend" Sprayer, solid brass, all the latest improvements, \$4.20 postpaid.

The rose bugs are in the bug editor's garden, and the only time that he is happy is at night when he dreams of machine guns mowing down whole regiments of the enemy.

Asparagus beetles can be controlled during the cutting season by letting a row or two go uncut. Here the pests will go, and can be killed with arsenical sprays. Cut all other rows regularly and closely.

Fall 1916 and Spring 1917 Delivery

We are now booking orders for Nursery Stock for delivery on and near the coast for Fall and Spring next and for the interior for Spring, 1917. Trees cannot be made to order—they have to be grown—this takes time. When you send in your order or entrust it to one of our representatives, the stock is reserved for you and you are sure of it, but when orders come in at the last moment, they have to be filled after the others. It is impossible to do the same justice to a rush order as to one placed well in advance—

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AVOID POISONS—As extensive growers of many years' practical experience, we are of the opinion that poisonous preparations are not essential for the eradication of insects and diseases on plant life, and feel sure that horticulturists will agree as to the desirability for the avoidance of the use of poisons, particularly on fruits and vegetables.

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WOMEN'S SECTION

British Columbia Women's Institutes

Motto—"FOR HOME AND COUNTRY"

Surrey to Hold Flower Show.

The Surrey Women's Institute held their monthly meeting on Tuesday, May 2, in the Municipal hall, Cloverdale, Mrs. Whiteley, president, in the chair. There was an attendance of 54.

It was decided to hold an institute flower show in the Cloverdale opera house on Thursday, August 3; the following ladies were appointed a flower show committee to take charge of all the preparations: Mrs. Jas. Loney, Mrs. Parr, Mrs. Witt, Mrs. H. Hornby, Mrs. R. D. MacKenzie, Mrs. H. Tarves, Mrs. Molyneux, Mrs. Wade, Mrs. Stevens, Mrs. Turnbull, Mrs. Kirkwood, Mrs. Ed. Loney, Mrs. Burrows, Mrs. Jack Brown, Mrs. A. Boothroyd and Mrs. Croft.

The institute is now undertaking the preparation of two budgets of "News from Home" every month for the Surrey men at the front.

Mrs. Molyneux read an interesting paper on the life and writings of Pauline Johnson and Miss L. Davis and Mrs. Whiteley gave recipes for two toothsome dishes.

The meeting was served with refreshments and then adjourned to June 6 when Mr. S. Shannon of Cloverdale has promised to give an address on the subject of "Milk, Its Food Value and Its Care."

Fancy Dress Parade.

Under the auspices of the Women's Institute, of Burquitlam, a children's fancy dress parade and carnival was held on the grounds of the Agricultural hall, Austin road, on May 27. The proceeds were in aid of the Red Cross and other patriotic societies. The band of the 131st Battalion was in attendance while there was an exhibition of boy scout work, by the Chesterfield Boy Scouts, and folk dancing under the direction of Miss Cave-Browne-Cave.

Will Entertain Neighbors.

The Naramata Women's Institute held their regular monthly meeting May 11. Roll call was responded to by the name of a play, playwright, or actor. Mrs. Carroll Aikens gave a most splendid paper on "Some Aspects of the Drama." Mrs. McGregor, of Penticton, was also a guest of the Institute. T. I. Williams had Current Events. During the afternoon plans were made for the "Rose Tea" which will be given on July 12th and our Institute will have as its guests the Summerland Women's Institute. The list of prizes for the fruit, flowers and vegetable show which will be held in October was read. Plans for this show will be taken up later. During the afternoon tea was served by the ladies. Mrs. Campbell, of Penticton, was also a guest of the institute on that afternoon.

Want Public Market.

At the general meeting of the Kalamalka Women's Institute twenty-one members were present and Mrs. Ball, a visiting member from Kelowna. Mrs. C. Brown read the resolution which had been drawn up by an appointed committee in connection with the open market in Vernon, urging the city council of Vernon, B. C. to use their influence in favor of the establishment of a country market in Vernon, one day in each week. It was also resolved that the Vernon Women's Institute, the Oyama Board of Trade, be asked to endorse this resolution and unite with the Institute in making re-

presentations in favor of a country market in Vernon, to the city council. After this business, the flower show proposition was discussed and voted for. A committee was appointed to draw up a programme and prize list for the flower show to be held on the first Thursday in August. The committee are Mrs. G. Moberly, Miss Irvine, Miss Heddle, Mrs. A. Lloyd, Miss Lloyd. Tea was served and a social half hour enjoyed by the members.

INSTITUTE NOTES.

The Penticton Institute held its regular meeting on May 9 when there was a large attendance of members. Papers were read by Mrs. Turner and Mrs. Cleland. Mrs. Rogers discussed current events and a recitation was given by Mrs. H. McGregor. The Cowichan Women's Institute has endorsed the memorial to the governor-general in council praying for the establishment of labor bureaus in Canada and recommended that the advisory board of the B. C. Institutes do likewise.

Hatzic Women's Institute.

The regular monthly meeting of the Hatzic Institute took place on May 18 with an attendance of 40 members, and a nice number of visitors from Hatzic. Mrs. Davies, secretary of the advisory board, was also a very welcome guest, and gave a very interesting address. A paper on bee culture, written by Mr. Couper, was read, and after the adjournment the afternoon finished with a short concert by Mrs. Saker and Mr. M. Clement Smith which was very much enjoyed by everybody. Tea and cake were then served by the hostesses for the day.

An Interesting Session.

The regular meeting of the Women's Institute at Mission, B. C., took the form of an "at home to our husbands," the Farmers' Institute and their wives. The evening was spent with songs, recitations, a debate on the Oriental question, and an amusing satire on local politics, closing with refreshments.

To Celebrate Arbor Day.

The May meeting of Langley Women's Institute, which was held in the town hall, Langley Fort, and presided over by Mrs. J. Allan, was one of this year's most successful meetings, at least so far as attendance went. An offer from Mrs. McConkey, of New Westminster, to address the institute at some future date on the subject of "The Political Equality League," was accepted. The opinion is that Langley ladies are strongly in favor of the franchise being extended to the women, although they do not adopt the smashing tactics of Mrs. Pankhurst and her followers as a means of inducing mere men to grant them the vote.

It was decided that a directors' meeting be held two weeks previous to Arbor Day—the third Tuesday in June—for the purpose of having the arrangements for that day completed. The day's activities will include a "bee" for the further clearing of the school grounds, as well as a rose display, at which prize ribbons will be given, at Fort school, Main street. The institute ladies will provide lunch for the men who give their services at the "bee." A splendid

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The blouse is made of the best wash silk, unusually fine in texture, closely woven and will wear exceptionally well.

The style is very pleasing. It has that high new roll collar which stands rather high in the back and falls gracefully into sort of reverses in front leaving a modest V-shape open. Cuffs also turn back to harmonize with the collar.

The points of the collar have round pearl buttons, and a neat pocket effect also fastens with the same pearl.

Really, this is one of the daintiest white wash silk blouses we've ever had. We sell it regularly at \$3.00, but this month by post only we will send it at \$2.25. All sizes.

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address on "How Best to Protect Our Girls" was given by Mrs. H. Morrison, of "The Nilgiris," Church street.

There will be no regular meeting in June; the celebration of Arbor Day will take the place of the meeting of that month.

Big Cranbrook Meeting.

Sixty members were present at the Cranbrook Institute meeting in May. A letter of acknowledgement was read from the secretary of the I.O.D.E. thanking the institute in the warmest terms for the proceeds of the patriotic shower in April donated for the Red Cross purposes. Mrs. J. H. King, attended on behalf of the I.O.D.E., of which she is Regent, and after gratefully acknowledging the splendid efforts of the Institute members, gave some excellent advice with regard to the various bandages, etc., required by the Red Cross Headquarters. She showed how absolutely essential it was to have a uniformity of size to facilitate packing besides providing what is actually required by the medical department, and expressed her willingness to supply any details of exact measurements, cutting and making of articles, having on hand patterns and directions from headquarters. Socks, being so constantly needed, a motion was made that 18 pounds of wool be purchased for this purpose and members wishing to knit can procure the yarn from Mrs. Tisdale, Armstrong Avenue.

The feature of the afternoon was an excellent essay composed by Mrs. H. H. McClure of Wycliffe, entitled, "A Mother's Duty to Herself."

Subjects for discussion at the September convention were invited by the District Advisory Board and at the instance of Mrs. McFarlane it was decided to emphasize a movement for the betterment of laws for the women and children of the province of British Columbia.

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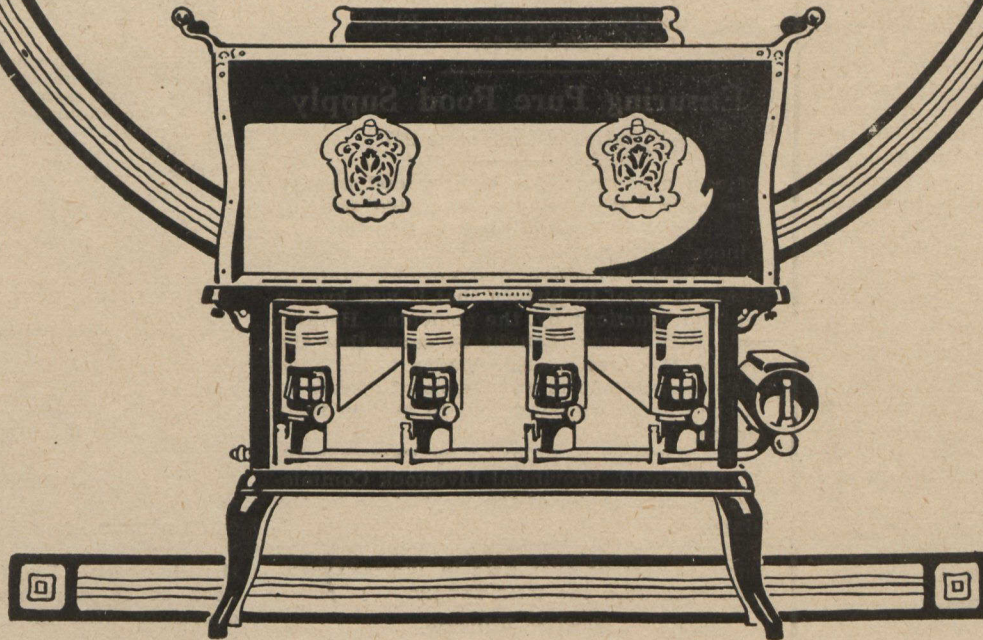
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Shawnigan and Cobble Hill W. I.

At the Shawnigan and Cobble Hill Women's Institute meeting in May an audience of forty gathered to hear Miss Kennedy (Victorian Order of Nurses), Victoria, speak on the subject of "How to Organize a Cottage Hospital or Maternity Nursing in Rural Districts." Miss Kennedy outlined the necessary procedure to arouse interest and to collect sufficient assurances of support to justify laying the wishes of a district before the council at Ottawa. She pointed out that, though most liberal financial and other help is afforded to local organizations for this purpose, yet, the policy of the Victorian Order, as well as of the controlling authorities of the Duchess of Connaught's and

Lady Grey's funds, is to require evidence of intention of self help in the locality anxious to benefit by skilled nursing, before the amount of subsidy is fixed or any details of extent of assistance are given.

The first steps must be the formation of a local committee and the canvass of the district to collect definite promises of subscriptions towards the annual cost of the nurse or nurses. Cordial thanks were given to Miss Kennedy for her practical advice.

The president, Mrs. F. Elford, announced with regret the resignation from the directors of Mrs. Eardley-Wilmot on account of ill-health, and the election of Mrs. Wheelton to the vacancy thus caused. Announcements were made of the details of the

Young People's Wild Flower show on June 3, and of the members' show on July 22; also particulars were given of the proposed short course of lessons in decorative needlework as applied to clothing, and attention was drawn to the Women's Institute exchange organization which it is hoped will receive the support of all the members.

Cowichan Women's Institute.

Mrs. H. D. Morten read an interesting paper on Indian legends at the monthly meeting of the Cowichan Women's Institute on Tuesday last. The president, Mrs. Blackwood-Wileman, spoke on home industries. Miss Hawden touched on the jam factory question. An extended report is held over to next issue.

Danger Lurks in the Mouth!

In Anaemia, or Starving of the Blood, the Food Decays in the Stomach

ANAEMIA is a disease which thins the blood. The victim becomes white and thin, and the vitality sinks to the zero mark. Death results from starvation. . . . Physicians find that the poison, which puts the contents of the stomach into a state of decay, originates in the mouth. . . . Decayed teeth and diseased gums are responsible for Anaemia, which is extraordinarily prevalent, especially among women.

COMMON cleanliness and an intelligent idea of the mechanism of the human machine will prevent this, as well as a host of other diseases, which, neglected, prove fatal. . . . No intelligent person will utterly neglect the mouth until the stomach becomes diseased. . . . For "hard times" could be no excuse for that! . . . If one's teeth are decayed and one cannot afford to have them replaced, he should at least have the decayed members removed or filled and the mouth made clean and wholesome. This costs next to nothing.

IF you, who read this, have allowed your teeth to fall into decay, or if the decay is just beginning, you should consult me without delay. . . . This service will cost you nothing, and I will tell you just what it will cost to have your mouth made sound and handsome and useful, or I will tell you just what to do to place yourself beyond the danger of diseases which originate in the mouth.

My PERFECT PLATES are made of the finest materials and fit your mouth perfectly. . . .

My PERFECT CROWNS AND BRIDGES are made of the highest priced teeth, modelled after perfect natural models . . . the crowns and backing of solid gold with platinum attachments.

All work guaranteed REALLY perfect for 10 years. The most modern painless methods only employed. My PERFECT CROWNS AND BRIDGES are

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CRANBROOK FAIR DIRECTORS OFFER PRIZES TO CHILDREN

The directors of the Cranbrook Agricultural Association have adopted an excellent idea for not only developing the characters of the young people of the city, but for supplementing the excellent work being carried on in this direction by the Farmers' and Women's Institute, the School Board and the Poultry Association. This is being accomplished by offering prizes along the lines of work carried on among the young people of the city by these various bodies.

All are interested in the welfare of the children and youths of the city and are desirous to help them in every way. The elders are doing their share and it behooves the young people to be up and doing so that they may be participators not only in the prize money put up by the Association, but in the benefits to be derived from work in the open air among the flowers, the vegetables, and the live stock. Below are some of the classes provided:

For the best groomed and conditioned animal shown in a halter or bridle, the animal to have been fed and attended by the exhibitor for at least three months previous to the fair, the exhibitor to be under 17 years of age. First prize, \$5.00; second, \$3.00.

Cattle—

For the best calf under six months' old, to have been fed and attended by the exhibitor who must be under 17 years of age. First, \$5.00; second \$3.00.

Poultry—

For the best trio (male and two females) shown by a competitor in the boys' and girls' poultry competitions. First, \$3.00; second \$2.00; third \$1.00.

Ensuring Pure Food Supply

Continued from page 947

of any meat unfit for human food passing the tests. He strongly advocated the inspection of all animal food used in the province. Incidentally he mentioned that animal food inspection was nothing new, as there is proof in history that it was known to, and practiced by, the ancients. He also said that it was thought by some that the reason the Jews were forbidden to eat pork was because of the prevalence of disease of a character very dangerous to man in their swine.

Dr. Jervis was followed by Professor W. T. McDonald, Provincial Livestock Commissioner, who spoke of the work done by the dairy convention of the Pacific Northwest, recently held at Vancouver, which was the most important ever held in Western Canada regarding the milk supply.

Hard to Educate.

It was brought out that in this matter the consumer was harder to educate than the producer, but it was hoped to do good missionary work along these lines, and it was planned to have a publicity campaign and possibly a "milk day" similar to the "apple days" which have been held. Professor McDonald said that British Columbia had taken the lead in the testing of dairy cattle and that Washington and Oregon were following that lead. He made some interesting remarks concerning the pasteurization of milk, which he could not endorse wherever it was possible to get a good clean supply of "whole" milk.

He explained what is known as certified milk is so expensive to produce that the consumer is not willing to pay the necessary extra cost to make it pay a profit to the

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L-708—White Japanese Silk Waist in long sleeve style, having deep cuff with short hemstitched turn-back. The front is gathered into shoulders and has two rows of hemstitching, and is finished with pearl buttons. Collar is convertible. All sizes. Price \$2.50

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producer, and gave his opinion that meetings such as that held recently were particularly valuable in helping the consumer to arrive at a proper conception of what pure foods are.

A discussion followed concerning the possibility of producing and selling at a profit certified milk, and the meeting was brought to a conclusion with a short address from the chairman. Dr. Tolmie emphasized the need of co-operation on the part of the consumer with the producer, who cannot produce certified milk at present prices and make a living at the business. He explained how the remarkable reduction in the prevalence of hog-cholera had followed a campaign of education and instruction and gave details to show how great this reduction had been and the safeguards now used to prevent its appearance.

There are still some people who imagine they can tell the sex of eggs before they are hatched, or as soon as they are laid. Some tell us that long eggs always hatch females, while others say that such eggs invariably hatch males. When it is considered that each hen shapes her egg according to the condition of her ovaries, and uniformly lays eggs of similar shape, the absurdity of the shape becomes apparent.