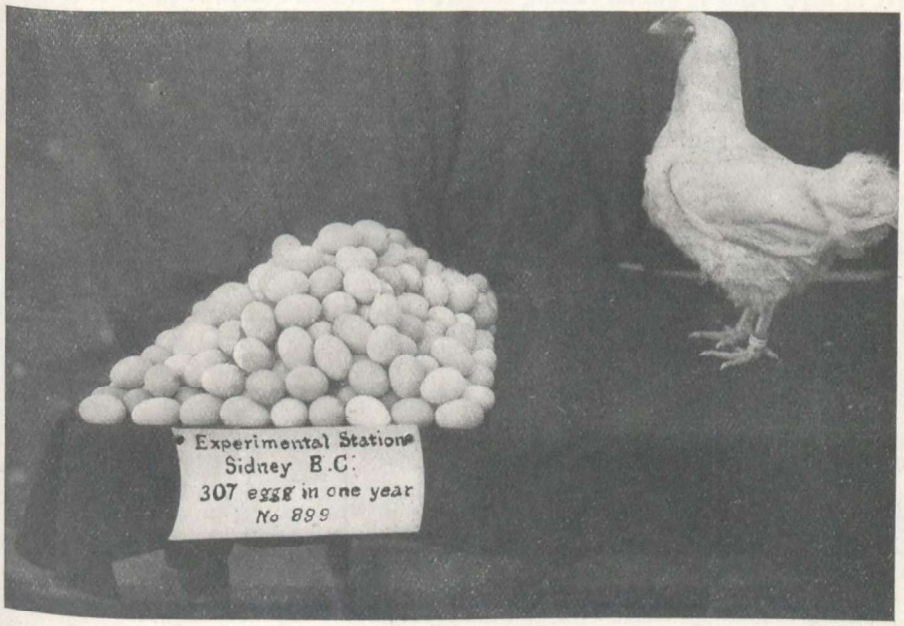
DOMINION OF CANADA
DEPARTMENT OF AGRICULTURE
DOMINION EXPERIMENTAL FARMS

EXPERIMENTAL STATION
SIDNEY, B.C.

REPORT OF THE SUPERINTENDENT

E. M. STRAIGHT, B.S.A.

FOR THE YEAR 1921



"Saanich Belle—307 eggs in one year.

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OTTAWA
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PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1922

EXPERIMENTAL STATION FOR VANCOUVER ISLAND, SIDNEY, B. C.

REPORT OF THE SUPERINTENDENT, E. M. STRAIGHT, B.S.A.

THE SEASON

The winter of 1920-21 was very mild. In fact there was no winter. Roses were picked on Christmas day, while many farm operations were carried on as in summer. The whole winter seemed to confirm the name given Vancouver Island locally as the California of Canada. As the season advanced, cold and backward weather prevailed. It was not that there was so much more rain than in other years, but the land remained cold and sodden, while vegetation was backward. It was noteworthy that the dry spell which is usually a feature of this season was not so pronounced or continuous this year, being frequently broken by showers, so that plants did not suffer to the same extent as found in many years. Despite all this, growth continued slow. Early fall rains interfered with the harvest, yet most crops were brought in with little loss.

The cold, backward weather at fruit blossoming time interfered with the perfect pollination of the flowers; hence the complete or partial failure of some types of fruit throughout the district. At the Station, cherries and pears were an excellent crop, while the apples had little commercial value; the fall sown grains were fair while the roots were up to average. In the garden, tomatoes were an excellent crop, but cabbage, cauliflower and the like did not respond to treatment and lost heart before the end of the season.

METEOROLOGICAL RECORD

Month	Highest Temp.	Lowest Temp.	Mean Temp.	Precipitation	Sunshine	Possible Sunshine
1921				Inches	Hours	Hours
April	65·0	28·0	45·5	1·13	192	411
May	78·5	35·0	52·3	1·57	290	473
June	74·0	44·0	57·5	1·36	162	482
July	77·5	43·0	59·9	0·04	354	484
August	81·0	45·0	59·4	1·02	249	444
September	68·0	40·0	53·6	2·74	164	377
October	67·0	35·0	49·0	4·80	121	335
November	57·0	25·0	42·1	4·00	48	276
December	55·5	16·0	36·3	3·60	63	259
1922						
January	48·0	17·0	34·5	1·65	97	273
February	46·5	20·0	35·1	1·79	89	286
March	54·5	28·0	39·6	1·20	116	370
Totals				24·90	1,945	4,470

ANIMAL HUSBANDRY

Up to the present time live stock work has been a minor department, only such stock being kept as were for farm work or production for farm consumption.

With horses no experimental work has yet been attempted, the four animals being kept wholly for the performance of work with the various departments of the farm.

With dairy cattle a herd numbering from 8 to 14 head has been maintained for a number of years. This herd has been composed of a few pure-bred Jerseys and the balance grade Jerseys and common grade cows, the product of which has been marketed as cream at Victoria and the by-product—in this case the main desideratum —utilized at the Farm poultry plant. Present plans, however, provide for the immediate reduction of this herd by the removal of several indifferent individuals, and the substitution therefor of a foundation herd of some six high-class Jersey cows, headed by a bull of like quality. The grade cows will gradually be eliminated. Once this small herd is founded, it is hoped to make dairy cattle and dairying one of the most vigorous departments of the Station work from the standpoint of experimental, record and cost of production work.

With sheep, a start has already been made with Southdowns, a small foundation flock having been purchased from Col. Robert McEwan, of London, Ont. It is proposed to build up this flock to the size indicated by the limited carrying capacity of the Station, making it a basis for experiment and cost finding.

Owing to limitation of equipment and dairy by-product, no work has yet been done with swine other than as required for the needs of the Station.

HORTICULTURE

FRUIT CULTURE

TEST OF APPLE VARIETIES

The object of this project is to add to the general knowledge of the district relative to apple varieties. It will be noticed that all the trees on the Station are still young, so that little is yet known concerning probable yield per tree, but much can be learned relative to age at which varieties come into bearing, the season and the quality. The following is appended:—

VARIETY TESTS WITH APPLES

Name of Variety	When set	No. of trees	Total yield per tree for 3 years	Quality of fruit	Season	Remarks
			lb. oz.			
Alexander	1916	2	18 4	Med. to good	Sept. 4	Very large.
Black Ben Davis	1916	2				
Blenheim Orange	1916	2				
Charles Ross	1914	2	68 12	Medium	Sept. 4	Unsound at core.
Caroline Red June	1916	3		Medium	Sept. 1-2	
Cox Orange Pippin	1914	12	22	Excellent	Oct. 2	Subject to scale.
Duchess of Oldenburg	1914	9	33 1	Excellent	Aug. 4	Good early apple.
Early Colton	1916	2	23 10	Poor	Aug. 2-3	Trenton better at same season.
Goal	1916	1				
Gravenstein	1914	9	11 7	Good	Sept. 1-2	
Grimes Golden	1914	13	38 15	Good to ex	Dec. 1-2	One of the best.
Jonathan	1914	12	23 12	Medium	Dec. 1	Very small.
King David	1914	2	120 12	Good	Nov. Dec.	Small but good yield.
			2 years			
King of Tompkins	1914	10	41 6	Good to med.	Nov., Dec.	Very popular.
Linton	1914	1	38 8	Medium	Aug. 4	
Lowland Ra berry	1914	7	20 4	Poor	Aug. 2	
McIntosh Red	1914	6	28 9	Excellent	Nov., Dec.	Best dessert.
Melba	1914	1	41 5	Excellent	Aug., Sept.	
Monsieur Gladstone	1914	2	14 8	Good	Aug. 1-2	Small, nice eating.
Missing Link	1919	2	Nil			1 tree 1 year.
Newton Pippin	1916	2	3 14	Good	Dec., Jan.	1 tree 2 years.
Peasgood Nonsuch	1915	1	6 0	Good	Sept. 1-2	Fine, large.
Northern Spy	1916		Nil.			
Percival	1914	1	45 10	Excellent	Aug.-Sept.	Subject to disease.
Petrel	1914	1	34 8	Good	Aug. 3-4	Extra early.
Red Astrachan	1914	14	9 3	Good in early seas.	Aug. 2-3	
Ribston Pippin	1916	1	0 8			
Rome Beauty	1914	2	30 0	Good	Dec.-Jan.	Appearance extra.
Saint Germain	1914	3	3 9	Medium	Aug. 3-4	
Spitzenburg	1916	2	4 0			
Sweet Bough	1914	2	11 8	Medium	Oct. 1-2	
Transparente de Croncels	1914	2	32 2	Excellent	Sept. 3-4	Good.
Trenton	1914	1	41 14	Excellent	Aug. 2-3	Finest early.
Vanderpool	1916	2	2 4	Good	Jan.	Firm good flavour.
Wagener	1914	11	52 13	Good	Nov.-Dec.	One of the best.
Wealthy	1914	4	44 2	Good	Sept.-Nov.	Promises well.
Winter Banana	1914	2	63 4	Good	Jan. 2-3	Appearance good.
Winterstein	1919	2	Nil.			
Wismer Dessert	1914	2	10 9	Good	Nov. 2nd week	
York	1916	1	Nil			
Yellow Transparent	1914	10	29 12	Good	Aug. 2-4	Good early.
Crab Apples—						
Florence	1914	2	62 5	Good	Aug.-Sept.	
Hyslop	1914	2	144 8	Good	Aug.-Sept.	Excellent. Good cropper.
Rondo	1919	1		Good		
Transcendent	1914	2	37 0		Sept. 1-2	Easily bruised.

TESTS OF ORCHARD SOIL MANAGEMENT

The object of this test is to determine the best practice for the district. Our results, so far as apples are concerned, are not to be regarded as conclusive. It would seem from the yields in some cases that trees in sod are doing as well as those under clean cultivation. Future results will probably show this to be erroneous, since the unthrifty appearance of the trees in sod points clearly enough to what may be expected later on.

ORCHARD SOIL MANAGEMENT TEST

Name of variety	Sod		Vetch		Clean cultivation	
	Average 1 tree for 3 years	No. of trees	Average 1 tree for 3 years	No. of trees	Average 1 tree for 3 years	No. of trees
	lb. oz.		lb. oz.		lb. oz.	
Cox Orange Pippin	27 8	2	25 0	3	25 11	3
Duchess of Oldenburg	30 8	2	25 11	1	55 4	3
Gravenstein	9 10	2	16 8	3	7 4	3
Grimes Golden	38 12	2	46 14	3	77 11	3
Jonathan	10 8	2	15 7	2	46 0	3
King of Tompkins Co	75 0	2	55 12	3	22 13	3
Lowland Raspberry	26 12	1	17 0	2	19 2	3
Red Astrachan	18 14	2	17 0	3	15 13	3
Wagener	51 2	2	43 0	1	59 4	3
Wealthy	22 0	2	.. ..	..	85 0	1
Yellow Transparent	13 3	2	18 13	3	66 14	3

APPLE HYBRIDIZATION

Standard apples on Vancouver Island have not done so well as at one time expected. The variety, the soil, the climate are all factors entering into the problem. Apple hybridization was undertaken in May, 1918, with the hope that new varieties might be created well suited to the island. Crosses of many standard sorts were made. Scions and buds were taken from the resulting seedlings and placed on larger trees in order to obtain fruit as quickly as possible. Many of these scions and buds are growing well, and promise much from the vegetative standpoint, but have not yet borne fruit.

TEST OF PEAR VARIETIES

The object of the experiment is to add to the general knowledge of the district in so far as this fruit is concerned. Though the trees are still young, much may be learned from the following:—

PEARS

Name of Variety	When set	No. of trees	Total yield per tree for 3 years		Quality of fruit	Season	Remarks
			lb.	oz.			
André Desportes	1914	1	44	12			
Anjou	1914	35	34	0			
Besi d'Hardenport	1914	1	78	12			
Besi de Chaumentel	1914	1	4	0	.....	.....	Leaf blight and blister.
Beurré Bachelier	1914	1	202	0			
Beurré d'Amanlis	1914	2	297	0			
Beurré Diel	1914	2	190	8			
Beurré Giffard	1914	2	15	4			
Beurré Hardy	1914	2	8	12			
Beurré Naghin	1914	2	139	0			
Bosc	1914	20	83	6	Good	Oct. 3-4	Fine flavour.
Boussock	1914	18	142	12			
Bartlett	1914	20	129	6	Medium	Aug.-Sept.	Good for preserving.
Belle Lucrative	1914	2	98	8	Medium	Sept. 3	Good early.
Beurré d'Avril	1914	2	132	6	Excellent	Feb.	Good winter and spring.
Bon Chrétien	1916	1	67	0			
Charles Ernest	1914	2	15	0			
Clairgeau	1914	20	105	3			
Conference	1914	2					
Crocker Bartlett	1916	1	26	0	Good	Sept. 3-4	Flavour especially good.
De Cure	1914	2	135	8			
Dr. Jules Guyot	1914	21	80	0			
Doyenne d'Alencon	1914	2	36	8			
Doyenne de Merode	1914	2	32	4			
Doyenne d'Hiver	1914	2	51	8			
Doyenne du Comice	1914	1	8	0			
Duchess d'Angouleme	1914	2	14	12	Good	Nov. 2-3	Flavour and quality very good.
Emile de Heyst	1914	2	78	4			
Easter Beurre	1914	2	63	10	Poor to med.	Mar. 2	Fairly good for season.
Favourite de Clapp	1914	2	191	2			
Fondante des Bois	1914	2	49	4			
Fondant Thirriot	1914	2	107	12			
Flemish Beauty	1914	1	202	8			
Glou Morceau							
Jargonelle	1914	2	41	8	Excellent	Aug. 2-3	Excellent dessert pear.
Kroones	1916	1	24	0	Very poor	Aug. 3-4	Not recommended.
Le Leetier	1914	2	70	0	Medium	Nov. 2-3	
Louise Bonne d'Avranche							
Lincoln Coreless	1914	2	223	11	Very poor	Feb. 4	Good looking but poor.
Mad. Baltet	1914	1	21	0			
Ernest Baltet	1914	1	18	0			
Marguerite Marillat	1915	2	87	4	Medium	Sept.-Oct.	Extra large.
Nouvelle Fulvie	1914	1	65	0			
Passe-Crassane	1914	2	39	12			
Pitmaston Duchess	1914	2	110	0	Good	Oct. 3-4	Fine looking pear.
President Deviolaine	1914	1	11	0			
Princess	1914	2	10	9	Medium	Oct. 2-3	Fine looking pear.
Royal Vendee	1914	1	28	6			
Rossney	1916	1	11	0	Medium	Sept. 3-4	Not attractive.
Souvenir de Congrès	1914	1	149	8			
Triomphe de Vienne	1914	1	95	8			
Vicar of Wakefield	1914	2	116	8	Medium	Dec. 3-4	
Virginie Baltet	1914	1	285	8			
Louise Bonne de Jersey	1914	16	80	6	Good	Oct. 1-2	Ex. good dessert pear.
Williams (Bartlett)	1914	2	119	8			
Wilder Early	1914	2	26	2	Poor to med.	Aug. 3-4	Rots quickly in storage.
Winter Bartlett	1914	1	56	3			
Worden Seckel	1914	1	24	8	Medium	Sept. 20	Fine pear for packing.

PEARS—Best Varieties for Yield

Name	Planted	No. of trees	One tree total yield for three years		Average yield for one tree for one year		Season
			lb.	oz.	lb.	oz.	
Beurré d'Amanlis	1914	2	297	0	99	0	Sept. 4 Pct. 1
Virginie Baltet	1914	1	283	8	94	8	Nov. 3-4.
Flemish Beauty	1914	1	202	8	67	8	Sept. 4.
eurré Bachelier	1914	1	202	0	67	5	Dec. 1.
Favourite de Clapp	1914	2	191	8	63	13	Sept. 2-3.
Beurre Diel	1914	2	190	8	63	8	Nov. 1-2.

PEARS—Six Poorest Varieties from Standpoint of Yield

Name of Variety	When set	No. of trees	Yield for one tree for three years		One tree for one year	
			lb.	oz.		
Besi de Chaumontel	1914	1	0	4	15 drams	
					lb.	oz.
Doyenne du Comice	1914	1	8	0	2	10
Beurré Hardy	1914	2	8	12	2	14
Princess	1914	2	10	9	3	8
President Deviolaine	1914	1	11	0	3	10
Duchess d'Angouleme	1914	2	14	12	4	14

DWARF PEARS

Name of variety	When set	No. of trees	Total yield f r 1 tree for 3 years		Quality of fruit	Season	Remarks
			lb.	oz.			
Andre Desportes	1914	2	50	10	Good	Aug.	Earliest.
Anjou	1919	2	Nil		Good to ex.	Dec.	Poor bearer here.
Barry	1919	2	Nil				
Beurré Bachelier	1914	2	65	12	Med. to good.	Dec.	
Beurré d'Amanlis	1914	1	96	0	Good	Sept.-Oct.	Excellent.
Besi d'Hardenport	1914	2	203	0	Good	Nov. 2-3.	Excellent cropper.
Besi Naghin	1914	2	27	0	Med. to good.	Dec. 3-4.	
Beurré Diel	1914	1	113	14	Excellent	Nov. 1-2.	Should be widely planted.
Beurré Giffard	1914	2	6	10	Good	Aug. 3-4.	Very shy bearer.
Beurré Hardy	1914	1	37	7	Med. to good.	Oct.-Nov.	
Besi de Chaumontel	1914	2	30	0	Medium	Dec. 3-4.	
Charles Ernest	1914	1	21	0	Poor to med.	Nov. 2-3.	Very shy bearer.
De Cure	1914	2	193	12	Good	Dec. 2-3.	Heavy and regular bearer.
Dr Jules Guyot	1914	2	74	12	Medium	Aug. 3-4.	
Doyenne d'Alencon	1914	2	21	4	Good to ex.	Feb. 2.	Best pear for the season.
Doyenne de Merode	1914	2	21	9	Med. to good.	Sept. 20.	Shy bearer.
Doyenne du Comice	1914	2	22	12	Good to ex.	Nov. 1.	
Doyenne d'Hiver	1914	1	198		Excellent	Jan. 14.	Ex. for season.
Favorite de Clapp	1914	2	134	0	Med. to good.	Sept. 2-3.	Good only in very early season.
Fondante des Bois	1914	2	94	14	Medium	Sept. 4.	Decays early at centre.
Fondant Thirriot	1914	2	114	8	Good to ex.	Nov. 1-2.	Delicious.
Forrele	1919	2	Nil				
Howell	1919	2	Nil				
Louise Bonne d'Avranches	1914	1	74	0	Excellent	Oct. 1-2.	A very fine pear.
Madeleine	1919	1	Nil				
Madame Baltet	1914	1	12	8	Medium	Jan.-Feb.	
Ernest Baltet	1914	2	93	14	Very good.	Oct.-Nov.	Subject to windfall.
Nouvelle Fulvie	1914	2	70	10	Poor to Med.	Nov. 4.	
Passe-Crassane	1914	2	38	8	Excellent	Feb. 1-2.	One of best winter pears.
Président Deviolaine	1914	2	27	13	Poor	Nov. 4.	
Royal Vendee	1914	1	Nil				
	1914	1	Nil				
Seckel	1919	1	Nil				
Souvenir de Congrès	1914	1	58	0	Med.-good.	Sept. 4.	Very large, over 1 lb. in some cases.
Triomphe de Vienne	1914	1	35	0	Medium	Sept. 3-4.	
Virginie Baltet	1914	2	139	12	Medium	Nov. 3-4.	Easily bruised.
Williams (Bartlett)	1914	1	79	0	Med. to good.	Sept. 3.	
Winter Nelis	1919	2	Nil				

ORCHARD SOIL MANAGEMENT FOR PEARS

A test of methods of orchard soil management relative to pears was begun in 1917. The object was to determine the best practice for the district. A division of the orchard area was divided into four equal blocks and a definite system of management practised on each, as follows:—

1. Clean cultivation.
2. Vetch cover crop.
3. Random crop.
4. Sod.

The results speak for clean cultivation, as will be seen by the following:—

STANDARD PEARS—ORCHARD SOIL MANAGEMENT

Name of variety	Clean Cultivation		Vetch		Random Crop		Sod	
	4 trees 3 years	1 tree 3 years	4 trees 3 years	1 tree 3 years	4 trees 3 years	1 tree 3 years	4 trees 3 years	1 tree 3 years
	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.
Anjou	272	68	171	42 12	120 2	30 0	126 8	31 10
Anjou	222 8	55 10	210	52 10	154 0	38 8	64 8	16 2
Bosc	370 8	92 8	524 8	131 2	275 0	91 4	174 12	43 11
Bartlett	794	198 8	480 8	120 2	520 4	130 1	281 13	70 7
Boussock	843 8	210 14	680 8	170 2	659 8	164 14	157 8	39 6
Clairgeau	747 8	186 14	467 8	119 2	376 0	94 0	349 0	87 4
Dr Jules Guyot	397 8	99 10	460 8	115 2	281 8	70 6	272 8	68 2
Louise Bonne de Jersey	770	192 8	42 14	10 10	226 12	56 11	161 0	40 4

PEAR HYBRIDIZATION

The object of the experiment was the creation of new varieties. The procedure was the same as with apples, viz., selection of parent stock and crossing of varieties thought to be most useful, the growing of seedlings in the nursery, and the grafting or budding of this wood on standard trees. This last procedure was intended to hasten the fruit bearing period. Since the experiment was begun in 1918, there are no results on which to report.

VARIETY TEST WITH PLUMS

The variety test of plums was begun in 1914, and was intended to add to the general knowledge of the district relative to same. The varieties were obtained from many sources, including British Columbia, California, France, and Ontario. Some of these trees are outstanding and attract much attention from the standpoint of quality as well as yield.

VARIETY TESTS WITH PLUMS

Name of Variety	When set	No. of trees	years in bearing	Average yield per tree for three years except as noted	Quality of fruit	Season	Remarks
				lb. oz.			
Apple	1919	2	.....	Nil			
Bartlett	1919	2	.....	Nil			
Beauty	1919	2	.....	Nil			
Black Diamond	1914	2	.....	235 2	Good	2nd wk Sep.	A good preserving plum.
Bradshaw	1914	2	.....	74 11	Good	Aug. 4	A good cooking plum.
Burbank	1914	1	.....	6 4	Poor	Sept. 3	Not recommended.
Coes Golden Drop	1914	2	1	19 12	.....	.....	Destroyed 1920.
Columbia	1914	2	1	85 4	Medium	Sept. 2	Good jam plum.
Combination	1916	2	.....	4 9	Poor	Aug. 4	Unusual flavour.
Conquest	1916	1	1	1 14	Good	Sept. 2-3	A fair plum.
Climax	1919	1	.....	Nil			
Drap d'Or	1914	2	1 tree 1 year.	38 7	Excellent	Aug. 2-3	Fine dessert plum.
Early Gold	1916	1	.....	80 14	Excellent	Aug. 2-3	Fine plum, will become popular.
English Damson	1914	2	.....	44	Good	Sept. 1-2	Makes excellent jam.
First	1916	2	.....	Nil			
Formosa	1916	1	.....	Nil	.....	Aug. 2	
Gaviotta	1914	1	.....	Nil			
Gold	1916	2	.....	Nil			
Giant	1916	2	.....	Nil			
Grand Duke	1914	2	1	27 0	Poor	Sept. 3	Destroyed.
Greengage	1914	2	.....	81 8	Excellent	Sept. 2-3	Sweet, good.
Jaune Hâtive de Thoisey		2	.....	38 6	Med	Aug. 1	Dessert plum.
Le plus precoce de tous	1914	1	.....	1 0	Medium	July-Aug.	Earliest plum.
Mammoth Gold	1916	1	.....	Nil			
Mallard	1914	2	.....	201 12	Excellent	Aug. 4	Heavy cropper, fine.
Maynard	1914	1	.....	0 10	Excellent	Aug. 2-3	One of the best.
Morris White	1919	2	.....	Nil			
Peach	1914	14	.....	55 8	Good to ex	Aug. 2	Good dessert.
Pond Seedling	1914	2	.....	187 0	Poor to med.	Sept. 3-4	Appearance and quality good.
Reine Claude de Bavay	1914	15	.....	43 3	Good	Sept. 4	Excellent flavour.
Shippers Pride	1916	1	.....	4 11	Medium	Oct. 1	Not so good as Columbia
Satsuma	1916	1	.....	Nil			
Shire-Summosis	1919	1	.....	Nil			
Shropshire Damson	1914	15	.....	22 5	Good	Sept. 4	Good shipper, makes excellent jam.
Suika-Moma	1919	1	.....	Nil			
Sultan	1916	1	.....	Nil			
Victoria	1914	2	.....	112 10	Good	Sept. 2-3	Good.
Washington	1914	2	.....	174 12	Excellent	Sept. 2-3	Good.
Yellow Egg	1914	2	.....	161 10	Good	Sept. 2	Excellent.

SIX HIGHEST YIELDING PLUMS

					One tree for one year
Black Diamond	1914	2	.....	235·2	78·6
Mallard	1914	2	.....	201·12	67·4
Pond Seedling	1914	2	.....	187·0	62·5
Washington	1914	2	.....	174·12	58·4
Yellow Egg	1914	2	.....	161·10	53·14
Victoria	1914	2	.....	112·10	37·8

PRUNES

Name of variety	When set	No. of trees	Years in bearing	Average yield per tree for three years	Quality of fruit	Season	Remarks
				lb. oz.			
Dorch	1916	2	.....	Nil			
Giant	1916	2	.....	28 0	Good	4 wk. Sept.	
Golden	1916	2	.....	5 6	Very good	3-4 "	Large, fine, sweet.
Hungarian							
Imperial Epineuse	1919	2	.....	Nil			
Italian	1914	14	.....	56 7	Good to ex	3-4 "	Good and very popular
Miracle	1916	2	1 tree	1 2	Med. to good	3-4 Aug.	
Pacific	1916	2	.....	18 8	Medium	3 wk. Aug.	
German Prune	1914	3	.....	13 15	Good	4 wk. Sept.	Firm.
Italian Prune	1914	3	.....	12 8	Good		
de Letricourt (Prune)	1914	2	.....	39 6	Med. to good	3-4 "	
Preece de Buhlerthal	1914	4	.....	73 2	Good	4 wk. Aug.	Delicious for preserves
d'Ebersweier (Prune)	1914	3	.....	6 7	Good to ex	2 "	Good shipper.
de Zimmer (Prune)	1914	2	.....	79 10	Very good	3-4 wk. Sept	Flavour very good.
Minot (Prune)	1914	1	.....	13 4			
Sugar (Prune)	1914	2	.....	90 8	Good	1-2 "	Fine sweet prune.
Standard	1915	2	1 year	10 8	Good to ex	Sept.-Oct.	Good size and appearance.
Tennant	1916	2	.....	2 0			
Tragedy	1914	2	.....	121 15	Good	3 wk. Aug.	
Silver	1914	1	.....	54 8	Medium	4 wk. Sept.-Oct.	

CHERRIES—TEST OF VARIETIES

The project was begun in 1914 and is still in progress. Many varieties have been set under exactly similar conditions. By the elimination of some of the poorer sorts and replacement by those of greater worth, an object lesson of value is being set up for all those who are interested in this fruit.

SOUR CHERRIES

Name of variety	When set	No. of trees	Years in bearing	Average yield per tree for three years	Quality of fruit	Season	Remarks
A. Brindillier	1914	3	1 year	3 8	Poor	4 Aug.	Ex. orn. variety.
Anglaise Hative	1914	2	2 years	36 8	Excellent	3 July	Can be substituted for sweet.
Belle de Franconville	1914	1	.....	28 12	Medium	3-4 Aug.	Best very late cherry.
Belle Magnifique	1914	3	.....	41 12	Good	4 July	Fine large.
Baldwin	1916	1	2 years	2 4	Med. to good	2-3 July	Good form and appearance.
De Belleu	1914	1	.....	8 10	Med. to good	3-4 June	One of the earliest.
Early Richmond	1914	15	.....	51 0	Good	1 July	Good colour, small.
English Morello	1916	1	2 years	6 12	Good	2-3 July	
Gros Gobet	1914	2	.....	48 5	.....	4 July	
Griotte Acher	1914	1	.....	34 10	Excellent	3-4 July	Delicious preserving.
Griotte du Nord	1914	1	.....	42 12	Good	4 June-1 July	One of the earliest.
Late Duke	1916	3	2 years	3 0	.....	3 Aug.	
May Duke	1915	2	.....	46 9	.....	4 July	
Montmorency	1914	15	.....	97 0	Excellent	3-4 July	One of best for preserving.
Montmorency Pleureur	1914	2	.....	14 12	Med. to good	4 July	Flavour good.
Morello	1914	14	.....	118 6	Good	2-4 July	One of the best.
Nouvelle Royale	1914	1	.....	59 5	Excellent	3-4 July	Free stone, good.
Olivet	1914	13	.....	99 0	Good to ex	1 wk. Aug.	Good late.
Ostheim	1917	3	.....	11 6			

SIX BEST CHERRIES FROM STANDPOINT OF YIELD

Name of Variety	When set	No. of trees	Total yield per tree for 3 years	Yield for one year	Remarks
Morello	1914	14	118 6	39 7	
Olivet	1914	13	99 0	33 0	
Montmorency	1914	15	97 0	32 10	
Nouvelle Royale	1914	1	59 5	19 12	
Montmorency Bretoneau	1914	4	54 0	18 0	
Early Richmond	1914	15	51 0	17 0	

SWEET CHERRIES

Name of variety	When set	No. of trees	Years in bearing	Average yield per tree for three years	Quality of fruit	Season	Remarks
Abbesse d'Oignies	1914	1	2	19 8	Good	4 July	
Abundance	1915	1	2	2 4		1-2 Aug	
Bing	1914	13	2	8 0	Very good	4 July-1 Aug.	Our best black cherry.
Belle de Choisy	1915	2		15 8		3 July	Choice dessert cherry.
Black Hawk	1914	2	2	18 0	Good	1-2 July	One of the best.
Black Heart	1916	1	1	4 8			
Black Tartarian	1914	2		16 13		2-3 July	Not so good as Black Hawk.
Black Republic	1916	1		Nil			
Burbank	1915	1	2	7 8	Good	4 June	
Choque	1914	1		95 6		3-4 July	Firm, handsome.
Deacon	1916	1	2	18 2	Good	3-4 July	Splendid appearance.
Elton	1914	3		63 8	Good	1-2 July	Appearance good.
Empress Eugenie	1914	4		66 9	Good	1-2 July	Flavour good.
Empereur Francois	1914	1	2	18 2	Good	4 July	Fair, firm.
Fruheste de Mark	1914	1	1	11 8		2-3 June	Good, early.
Gawafal	1916	1	1	0 7	Medium	3-4 July	
Gawafal Grand	1916	1	2	1 6	Medium	1-2 July	
Governor Wood	1916	1	1	8 0	Good	3-4 July	Bruises show badly.
Gros Blanc	1914	1	2	1 2			Fine, ornamental.
Gros Rouge	1914	1	2	9 14	Medium	2 July	
Gros Noir	1914	1	1	8	Good	2-3 July	Large.
Guigne d'Annonay	1916	1	1	12	Medium	3 June	Very sweet.
Guigne Beauty de l'Ohio	1914	2	1 1-2	55 7	Excellent	3-4 July	Fine dessert.
Guigne Belle d'Orleans	1914	1	2	33 12	Medium	4 June	
Guigne Pourpre Hative	1914	1		Cut.	Medium	1-2 July	Splits after rain.
Guigne Precoce de Taragon	1914	1	2	26 4	Good	3-4 June	Fine early.
Guigne Precoce Rivers	1914	1	2	19 12	Good	4 June	Fine early
Jaboulay	1914	2	1 1-2	10 7	Medium	4 June	Splits badly.
Jeffrey Duke	1914	1		17 8	Good	2 July	
Lambert	1914	3		99 9	Good	4 Aug.-Sept.	
Marjolet	1914	2	2	13 11	Good	4 July	Very promsing.
Napoleon	1914	1	1	11 8	Excellent	3-4 July	Fine flavour.
Pelissier	1914	1	2	17 14	Good	3-4 July	Fine large.
Pleureur	1914	1		Nil	Medium	1-2 July	Split after rain.
Reverschon	1915	1	2	9 12	Medium	1 July	
Reine Hative	1914	1	1	3 4	Good	3-4 July	Bitter if picked too soon
Reine Hortense	1914	2		39 14	Very good	3 July	
Royal Anne	1914	6	2	47 10	Good	4 Aug	
Tardif de Lade B. Agathe	1914	2		38 0	Excellent	3-4 Aug	Fine late.
Windsor	1914	5	2	29 1	Excellent	3-4 July	Fine popular.
Whiteheart	1916	1		17 12		3-4 July	Bruises show readily.

The Cherry—A Prolific Bearer on Vancouver Island.

PEACHES

Test of varieties for orchard conditions was begun in 1914 and has been continued since. It is true that peaches can be trained on the sheltered side of a building and crops produced with some success, but for field work the peach is not a success on this farm, as will be seen by following records:—

VARIETY TEST WITH PEACHES

Name of variety	When set	No. of trees	Average yield per tree for three years	Quality of fruit	Season	Remarks
			lb. oz.			
Admiral Dewey	1919	2	Nil			
Alexander	1914	2	46 12	Medium	3-4 Aug.	1918 bore 73·12 per tree.
Alton	1916	2	Nil			
Early Crawford	1914	2	"			
Early Imperial	1919	2	"			
Early Elberta	1916	1	"			
Fitzgerald	1914	1	"			
Hale Early	1914	2	88 5	Medium	2-3 wk. Aug.	Almost freestone, good cropper.
Krummels October	1916	1	"			
Mayflower	1919	2	"			
Muir	1919	2	"			
Red Bird	1916	1	"			
Royal George	1919	2	"			
Triumph	1914	2	1 13	Medium	2 wk. Aug.	

GRAPES

This project was undertaken in 1915 and was intended to determine most suitable varieties. The season is quite long enough for the grapes of some varieties, but the heat is not nearly sufficient to develop the best flavour. Of those tried, the tests so far would show the Lindley and Hartford to be most promising for the district.

VARIETY TEST WITH GRAPES

Name of variety	When set	No. of vines	Average yield per vine for three years	Quality of fruit	Season	Remarks
			lb. oz.			
Black Hamburg	1918	2	Nil			
Brant	1915	7	34 13	Some value for juice.	2-3 wk. Oct.	Good cropper, 16 lb. 1 vine three years after planting
Black Prince	1916	2	2 0			
Brighton	1915	2	7 6	.....	.....	Imperfect fertilization.
Buckland Sweetwater	1915	1	Nil			
Canada	1915	5	34 3	Valuable for juice.	3-4 wk. Oct	
Campbell Early	1915	2	36 0	.....	3-4 "	Large fine grape.
Concord	1916	1	6 0	.....	.....	Does not ripen.
Dattur de Bayreuth	1915	1	Nil			
Delaware	1916	2	Nil			
Foster Seedling	1915	1	33 0	.....	.....	Does not ripen.
Flame Tokay	1916	2	Nil	.....	.....	Does not ripen.
Gros Colman	1915	2	37 10	.....	.....	Still green in Dec.
Hartford	1915	5	25 15	One of best	1-2 wk Oct.	3 years after planting yielded av. 13·6.
Lindley	1915	3	50 8	Good sweet	1st "	Good cropper.
Moore Early	1915	1	1 0			
Peabody	1915	4	22 4	Fair	1-2 wk. Oct.	
Rose of Peru	1916	1	Nil			
Trentham Black	1915	1	"			
Vergennes	1915	3	19 5	Medium	3-4 wk. Oct.	Imperfect fertilization.
Winchell	1915	3	Nil			

FIGS

The work with figs, begun in 1914, has been quite extensive. Twenty-eight varieties have been grown, and yet much remains to be learned. No horticultural problem presents greater difficulties. The trees are comparatively hardy, and fruit has been produced of fair quality; but there is no certainty that fig growing on the island has any commercial future.

FIGS

Name of variety	When set	No. of trees	Yield of fruits	Average growth three years	Condition of trees
				ft. in.	
Agen	1919	1		14	Good.
Angelique	3-1919	6		3 12	
	3-1916			3 23	Killed 1920.
Black Ishia	1-1919	3	3 frt. Sept. 3..	1 12	
	2-1916			2 27	Poor. Top died.
Brown Turkey	1919	3	Small number Aug. 15.	8	Med. to poor.
Brunswick	1-1919	2		1 6	
	1-1915			1 14	Medium.
Californian Black	-1919	3		1 19	
	2-1916			2 27	Killed to ground 1919.
Calimyrna	1-1919	2		1 8	
	1-1916			1 28	
Celeste	3-1915	4	Small number	2 17	2 trees killed.
	1-1919				
Col. di Signoria nigra	2-1919	4	Sm. flor.	2 13	
	2-1915		April 30	2 23	Vigorous tree.
Drap d'Or	3-1919	5	Large	3 8	
	2-1915	1		2 21	Good.
Dauphine	1-1916	1		1 9	
Ladaro	5-1919	7		5 10	
	2-1915			2 20	Good. Vigorous.
Milco (Caprifig)	1919	4	Small	25	Good.
Mission	2-1915	2	Large number Aug. 25.	2 21	Strong grower.
Pastiliere	4-1915	4	Small	16	Good.
Ronde Noir	5-1919	7		5 11	
	2-1915			2 17	
Royal Vineyard	2-1919	4	Small	2 10	
	2-1915			2 20	
San Pedro White	4-1919	5	14 frt. 1919		Died back last 2 years.
	1-1915				
Smyrna	1915	3		18	Medium.
Warren Brown Turkey	1915	5			Very poor.
White Adriatic	3-1919	5		2 19	Fair.
	2-1916				
White Genoa	4-1919	4		12	Fair.
White Ischia	2-1919	4		2 7	
	2-1915			2 22	Killed to ground line.
White Semoa	1-1915	1		1 7	Poor.
Wilson Smyrna	4-1919	4		4 6	Very poor.
Ficus carica	1915	4	3½ oz. frt. Sept. 8	20	Very vigorous.
Doree	1915	2	2 frt. Aug. 24..	25	Good.

BLACKBERRIES

The blackberry is a great success in this province. It grows and yields well. The matter of marketing is, however, another consideration, since blackberries grow everywhere and with great ease in this province, and cannot be shipped out of it, owing to the character of the fruit itself. Of all the sorts tested here the Himalayan stands in a class by itself. The berries are large, the quality is excellent, the season is long.

BLACKBERRIES

Name of variety	When set	No. of bushes	Produce per acre for last five years	Average yield per year per acre for last five years	Remarks
			lb.	lb.	
Erie	1913	12	27,094·6	5,418·14	Fair.
Himalayan	1916	12	79,468·14	15,893·10	Good.
Lacinaatus	1916	.....	.....	.....	Destroyed 1919.
Mammoth	1913	8	10,478· 8	2,095·11	Fair.
Phenomenal	1913	12	16,849·15	3,569·15	Fair.
Low	1919	3	6,503·11	2,167·14	Fair.
Snyder	1913	12	2,129·10	425·14	Fair.

BLACK CURRANTS

The black currant is a very popular small fruit on Vancouver Island. Varieties have been tested since 1913. It has been found that late fruiting varieties, such as Buddenborg and Victoria, largely escape the ravages of the currant worm. The average yield per 6 bushes and per acre for 5 years is here given:—

Black Currants	6 Bushes lb.	oz.	Per Acre lb.	oz.
Boskoop iGGant O	26	12	6,473	8
Boskoop Giant L	25	2	6,080	2
Buddenborg	27	4	6,594	8
Climax	19	5	4,673	10
Collins Prolific	13	10	3,297	4
Clipper	15	8	3,751	..
Eagle	18	10	4,507	..
Eclipse	15	3	3,675	..
Mangus	19	12	4,769	8
Kerry	14	8	3,509	..
Saunders	15	8	3,951	..
Topsy	18	12	4,537	8
Victoria	22	14	5,535	12

RED CURRANTS

Red currants of several varieties have been under test for several years. Varieties, insect pests and disease have been studied. Average yield for 5 years is here given:—

Red Currants	6 Plants lb.	oz.	Per Acre lb.	oz.
Admirable	12	8	3,025	..
Cherry	13	8	3,267	..
Chautauqua	14	2	3,418	4
Cumberland	54	4	13,128	8
Grape	49	8	11,979	..
Greenfield	51	12	12,523	8
Perfection	38	4	9,256	8
Red Cross	57	12	13,975	8
Rankin Red	53	12	13,007	8
Red Dutch	29	8	7,139	..
Victoria	41	4	9,982	8
Wilder	48	12	11,797	8

WHITE CURRANTS

White currants were planted at the Station at the same time as other varieties. White currants are heavy yielders of excellent fruits, but for these there is no sale. The planting of this fruit is not recommended. Appended is the average yield for 5 years:—

White Currants	6 Plants lb.	oz.	Per Acre lb.	oz.
Large White	41	8	10,043	..
White Cherry	43	13	10,602	10
White Grape	45	8	11,011	..

STRAWBERRIES

A test of varieties was begun in 1914 and has been continued since. Many sorts have been tried out and many discarded. Magoon is the most popular berry in the district from the shipper's standpoint.

Name	1919 lb.	1919 oz.	1920 lb.	1920 oz.	Average per year lb.	Average per year oz.
Glen Mary	8,108	9	5,657	2	6,882	13
Oregon	6,813	12	6,765	..	6,789	6
Mariana	8,226	6	5,115	..	6,670	11
Warfield 2	8,886	6	3,653	9	6,269	15
Magoon	6,977	2	5,138	9	6,057	13
Splendid	7,000	11	4,455	10	5,728	2
J. Paxton	5,044	6	4,879	4	4,961	13
Royal Sovereign	7,326	..	2,553	..	4,948	8
Dr. Burrill	5,185	11	4,266	6	4,726	..
Cordelia	5,755	..	3,630	..	4,692	8
Valeria	8,886	6	117	13	4,502	5
Sharpless	4,219	4	4,502	2	4,360	11
Virgilia	6,199	4	2,498	9	4,348	14
Senator Dunlap	5,612	..	2,470	8	4,041	4
Magic Gem	4,290	..	3,512	1	3,901	..
Cassandra	4,549	4	3,252	13	3,901	..
Triomphe de Ghent	5,702	..	1,767	13	3,734	14
Julia	4,620	..	2,545	11	3,582	13
Portia	4,007	2	1,956	6	2,981	12
Desdemona	4,808	12	1,107	13	2,958	4
Superb	3,983	9	1,885	11	2,934	10
Premier	3,417	13	2,333	9	2,875	11
Early Ozark	4,048	12	1,654	1	2,851	6
Prize	3,630	..	1,650	..	2,640	..
Brandywine	3,818	9	814	11	2,316	10
Patagonia	1,456	..	1,530	10	1,493	5

Loganberries.—Disease control. *Conithyrium fuckelii* is very destructive in certain seasons. Lime sulphur spray applied before buds open, followed by Bordeaux prior to opening of blossom, have been successful in a large degree in preventing loss of crop.

RASPBERRIES

The following experiment has been conducted:—

A. Mulching v. no mulching.

Mulching. Average for 3 years 3,276 pounds per acre.

No mulching. Average for 3 years 1,913 pounds per acre.

B. Mulching and watering v. mulching.

Mulched and watered. Average for 3 years 5,074 pounds per acre.

Mulched only. Average for 3 years 3,276 pounds per acre.

VEGETABLE CULTURE

VARIETY TEST WITH POTATOES

To determine the best varieties for the district was the object sought in this project, begun in 1914 and continued since.

POTATOES

Name of variety	When set	Date of blooming	Years under test	Yield 66 ft. row	Yield per acre	Remarks
				lb.	lb.	
Arran Chief	May 9	VII–12	4	36·0	9,504	
Barnhouse Beauty	"	VII–10	1	15	3,960	
Burbank	"	VII–1	2	39	10,296	Ex.
Cambridge Russet	"	VII–4	1	58	15,312	
Dobbie Prolific	"	VII–13	1	22·4	5,874	
Burpee Early	"	VII–1	2	38·0	9·932	
Early Ohio	"	VI–28	2	28·0	7,392	
Early Rose	"	VI–30	4	35·0	9,240	Good.
Edzel Blue	"	VII–12	1	39·8	10,428	
Eureka	"	VI–30	4	50·0	13,200	
Great Scott	"	VII–10	1	32·8	8,580	
Green Mountain	"	VI–30	2	53·0	13,992	Ex.
Gold Coin	"	VII–8	4	19·4	5,082	
Irish Cobbler	"	VII–10	4	26·0	6,864	
Jersey Royal	"	VII–9	2	53·4	14,058	Ex.
Jones White	"	VII–8	4	60·12	16,038	Ex.
Kerr Pink	"	VII–6	1	38·0	10,032	
King Edward	"	.....	4	47·0	12,048	
King George	"	.....	1	35·4	9·306	
Majestic	"	VII–10	1	30·8	8,052	
Million Dollar	"	VII–10	4	39·8	10,428	
Netted Gem	"	VII–10	1	62·0	16,368	Ex.
Rural New Yorker	"	VII–12	2	16·8	4,356	
Scottish Triumph	"	.....	4	35·0	9,240	
Sharpe Express	"	VII–9	4	32·0	8,448	
St. George	"	VII–14	4	45·0	11,882	
The Factor	"	VI–30	4	37·8	9,900	
The Provost	"	VII–6	1	26·8	6,998	
Wee McGregor	"	VII–15	1	64·8	17,028	Ex.
American Wonder	"	VI–29	1	48·0	12,672	Ex.
Muttnomok	"	VII–15	1	58·0	15,312	Ex.
V.I.S. No. 1	"	VI–29	3	42·8	11,220	
V.I.S. No. 3	"	VII–15	3	32·8	8,580	
V.I.S. No. 6	"	VII–16	3	48·0	12,672	
V.I.S. No. 7	"	VII–12	3	34·8	9,108	
V.I.S. No. 8	"	VII–12	3	42·0	11,088	
V.I.S. No. 13	"	VII–16	3	23·8	6,204	
V.I.S. No. 16	"	VII–14	3	35·0	9,24	
V.I.S. No. 19	"	VII–10	3	43·8	11,484	
V.I.S. No. 25	"	VII–10	3	39·8	10,428	

POTATO BREEDING

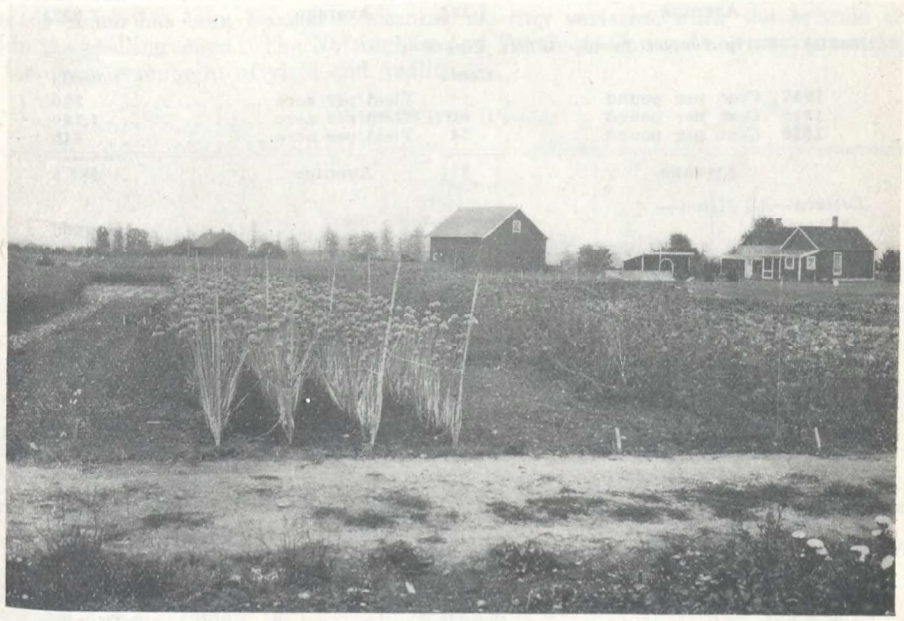
Of the many varieties produced from seed, only a few now remain, and these are not of great promise.

3	Oval round	Mid.	M.L.
6	" Flat	2nd early	M.L.
7	" Flat	2nd early	M.L.
8	Round	2nd early	V.L.
12	Oval Round	Main crop	M.L.
13	Round Oval	Main crop	L.
16	Oval Round	Mid.	M.L.
17	Kidney Round	Mid.	S.M.L.
25	Round Flat	Mid.	M.L.

M=medium; V=very; S=small; L=large.

IRRIGATION FOR POTATOES

Eleven varieties were used in this experiment. The seed potatoes were cut in halves so that each plot received the same strain of tubers at planting time. The



Seed Growing as a Commercial Proposition is being undertaken by many.

total amount produced on the irrigation plot was 456 pounds 12 ounces. No irrigation, 257 pounds 8 ounces.

VEGETABLE SEED GROWING

The object of conducting this experiment was to determine the cost of producing a pound of seed of the various vegetables. Record of time expended in the various operations has been kept, with results as follows:—

Spinach—Viroflay—

		Cents		Pounds
1919	Cost of producing 1 lb...	29½	Yield per acre	500
1920	Cost of producing 1 lb...	17	Yield per acre	1,260
1921	Cost of producing 1 lb...	24½	Yield per acre	972
	Average for 3 years ..	23	Average per year	911

Peas—English Wonder—

		Cents		Pounds
1919	Cost of producing 1 lb...	5	Yield per acre	2,411
1920	Cost of producing 1 lb...	5	Yield per acre	2,380
1921	Cost of producing 1 lb...	3¾	Yield per acre	2,672
	Average for 3 years ..	4½	Average per year	2,487½

Cabbage—Early Jersey Wakefield—

		Cents		Pounds
1919-20	Cost of producing 1 lb.	18	Yield per acre	1,680
1920-21	Cost of producing 1 lb.	22	Yield per acre	1,615
	Average	20	Average	1,647½

45256—3½

VEGETABLE SEED GROWING—*Concluded*

Onion—Large Red Wethersfield—

		$ c.		Pounds
1919-20	Cost of producing 1 lb.	1.20	Yield per acre	1,330
1920-21	Cost of producing 1 lb.	1.25	Yield per acre	735
	Average	1.22½	Average	1,032½

Radish—Early Scarlet Turnip White Tipped—

		Cents		Pounds
1918	Cost per pound		Yield per acre	800
1919	Cost per pound	31	Yield per acre	1,160
1920	Cost per pound	34	Yield per acre	645
	Average	32½	Average	868.5

Lettuce—All Heart—

		Pounds		Pounds
1918	Plot 1/10th acre. Yield	40	Yield per acre	400
1919	Plot 1/10th acre. Yield	12	Yield per acre	120
1920	Plot 1/10th acre. Crop lost.			
1919	Cost to produce 1 lb.	$1.05		

Parsnip—

		Pounds		Pounds
1919	Plot 1/40th acre. Yield	93.8	per acre	3,740
1921	Plot 1/72th acre. Yield	20.8	per acre	1,476
			Average	2,608

Bean—V.I.S. No. 1—

		Cents		Pounds
1919	Average cost per lb.	9	Yield per acre	837
1920	Crop spoilt.		Yield per acre	13,666
1921	Average cost per lb.	7½		
	Average	8¼	Average	7,252.8

Parsley—Double Curled—

		Pounds		Pounds
1919-20	Plot produced	47	Yield per acre	1,786
1920-21	Transplanted	27	Yield per acre	1,107
	Cost per lb., 33c.		Yield per acre	4,797
	Not transplanted	117		
	Cost per lb., 7½c.		Average per acre	2,563.5

Corn—Golden Bantam—

		Cents		Pounds
1920	Average cost per lb.	18	Yield per acre	1,088
			Yield per acre	1,648
			Average	1,368

VARIETY TESTS WITH VEGETABLES

Much work has been done through the years with vegetables, discarding the poorer sorts, and holding to such varieties as appeared best suited to the district. During the past season, however, little of this was done.

SWEET CORN

Developing a type of Golden Bantam corn suited to Southern Vancouver Island has been attended with some success. A tall-growing, heavy grain-yielding, high-ear type of plant has been sought. The work is being continued.

TOBACCO

Tobacco as a commercial proposition has been tried at the Station, but has been found practically a failure, owing to the low summer temperatures and the moisture-laden air. These conditions have put curing without artificial heat almost out of the question.

NUT GROWING

FILBERTS

The project was undertaken to determine best varieties for district among existing sorts and to create other varieties of superior merit through hybridization. Already much has been learned concerning existing varieties, while the hybrids are yet in the seedling stage. The Nottingham and Fertile de Coutard are most promising so far, from standpoint of yield and quality.

FILBERTS (*Corylus*)

Name of variety	When set	No. of trees	Years in bearing	Average yield per tree for three years except as noted	Quality of fruit	Season	Remarks
				lb. oz.			
Avellana	1918	1	.....	2 nuts.			
Calyculata	1918	1	.....	Nil			
Colurna	1918	1	.....	"			
Commun	1918	1	.....	"			
Barcelona Filbert	1916	1	.....	"			
California Purple	1916	1	.....	"			
du Chilly	1916	2	1 year	0 10	.....	Sept. 21.	
English Filbert	1916	2	.....	Nil			
Kentish Cob	1916	2	1-1 year	0 10			
Merveille de Bollwiller	1915	6	.....	8 11	.....	2-3 wk. Sept	Large tree, poor yielder.
Nottingham	1915	6	.....	12 7	.....	"	1921 crop taken by birds.
Red Hazel	1916	2	1 year	3 2	Ex	.....	Promising.
Spanish Purple	1916	1	.....	Nil			
Macrocarpa	1915	5	.....	0 7	.....	.....	Not romising.
Macrocarpa davidana	1918	1	.....	Nil			
Macrocarpa à feuille pourpre	1915	2	2 years.	4 7	Good firm		
Macrocarpa à feuille lacinae	1916	1	.....	Nil			
Macrocarpa d'Angleterre	1915	1	.....	Nil			
Macrocarpa de Provence	1915	2	.....	Nil			
Macrocarpa Emperor	1915	1	1 year	0 10			
Macrocarpa du Bearn	1916	1	1 year	0 6			
Macrocarpa Gosford	1916	2	.....	Nil			
Macrocarpa Pellicule rouge	1916	1	.....	Nil			
Macrocarpa Prolific	1915	1	.....	2 5	.....	2-3 wk. Sept	
Macrocarpa Fertile	1915	2	1 year	5 12	.....	2-3 wk. Sept,	
Macrocarpa de Coutard	1915	7	.....	22 5	Ex	2-3 wk. Sept.	One of best yielding nuts.

ALMONDS

The test of the almond as an orchard crop was begun in 1915. Only one variety, a hard shell, ***Amagdalus communis,*** has fruited so far. The quality was very good, but the trees seem subject to mildew under moist conditions. The future for the almond on the Island would seem to be very uncertain. See Bulletin 49, also for pecans and hickories.

CHESTNUTS

Many varieties of chestnuts are under test. Growth has been satisfactory. They are beginning to bear, but have not reached a stage where a satisfactory report is possible.

The Culture of Almonds.—Still Uncertain at the Station.

WALNUTS

The walnuts at the Station continue to make progress, but have not yet reached the productive stage. The walnut develops slowly, and does not stand transplanting well. Seedlings when very young transplant without serious check. Many grafted varieties and seedlings are under test.

Nuts of the Filbert Tribe do well.

BULBS AND FLOWERS

CONTROL OF DISEASE IN IMPORTED TULIP BULBS

Kind of Bulb	Treatment	Results
25 Tulips	Soaked in coal oil for 3 hours	No growth.
25 Tulips	Soaked in formalin, 2 oz. to 3 gallons for 3 hours	All grew. Disease controlled.
25 Tulips	Boiled linseed oil for 3 hours	No growth.
25 Tulips	Covered with "Red Line" lubricating oil for 3 hours	14 grew.

It will be noted that formalin, 2 ounces to 3 gallons water, proved effective in controlling disease, while at the same time the bulbs so treated were not noticeably injured.

BULBS, DEPTH OF PLANTING

An experiment to ascertain suitable depth for bulb planting was undertaken in 1917. Bulbs have been planted 2, 4, 6 and 8 inches deep. Tulips at 6 inches have given finest bulbs and at 4 and 6 inches have given finest flowers. Hyacinths at 6 inches have given finest bulbs and blooms.

Tulip	Number planted	Weight	Depth	Number bulbs which grew	No. 1 bulbs lifted	Weight	No. 2 grade lifted	Weight	No. 3 grade lifted	Weight	Number of bulbs flowered	Results
		oz.	in.			oz.		oz.		oz.		
Couleur de Cardinal—												
1	25	1·0	2	23	23	1·85	15	5½	34	2¾	21	Lighter 1 grade bulbs, larger number small.
2	25	1·0	4	21	22	1·10	11	4¾	32	2¾	21	
3	25	1·05	6	24	25	1·15	12	5½	27	2¾	24	Best 1st and 2nd grade bulbs.
4	25	1·05	8	25	25	1·13	3	3½	15	2	24	
Hyacinth, single bedding whites—							labs					
1	12	2·6	4	11	11	2·12	15	7½	26	2·8	9	Shallow planting gave 15 light slabs deep gave 4, 6″ gave best flowers, bulbs and slabs.
2	12	2·6	6	12	12	2·12	11	8¾	23	3·5	12	
3	12	2·7	8	12	12	2·15	11	9	23	2·10	12	
4	12	2·7	10	5	12	2·0	4	2¼	16	2·3	5	
Narcissus, Mad. de Graaff—												
1	10	1·7	2	10	10	1·8	7	9¾	17	2·2	10	4″ gave finest bulbs and flowers
2	10	1·8	4	10	10	1·12	8	10¼	18	2·6	10	
3	10	1·8	6	10	10	1·12	9	9¾	19	2·6	10	
4	10	1·8	8	7	10	1·4	5	4¾	15	1·9	7	

BULB INCREASE

(Increase of tulips and hyacinths by "scooping" or "scoring")

This experiment was started to obtain information relative to rapidity in increase in numbers and size by scooping or scoring. Thus bulbs of average size were planted in sand boxes and then transferred to open ground. The same system was followed with "scoring". It was found that under our conditions from 20 to 80 baby bulbs were attached to the parent bulb.

BULBS, RAPIDITY OF INCREASE

To ascertain the rapidity of increase of small bulbs to commercial size was the object in view in this project. These grade bulbs were planted in 3-foot rows on trench bottom 10 inches wide and 6 inches deep. Results are not yet available.

LILY BULBS

This project was conducted to gain information on different varieties of lilies imported from Japan and growing under approved methods. Though bloom has been

In the Garden.

excellent, the increase has been small. Some varieties have not held their own. The most productive in bulb increase are:—

Lilium Brownii odorum
Lilium Harrisoni
Lilium Tigrinum Fortunei giganteum
Lilium Henryi
Lilium Speciosum Melpomene
Lilium Speciosum Album
Lilium Speciosum rubrum
Lilium Speciosum magnificum
Lilium Auratum

Some work has been done to obtain information relative to value of sprays in control of sclerotina. Spraying has been tried, using Bordeaux and formalin, but without beneficial results.

BULBS, GAINS OR LOSSES

This experiment was inaugurated to keep a close check on gains or losses caused by age and by seasonal conditions; and also to note the influence of flower production. Twenty-five average bulbs were weighed, several varieties over a series of years. Results so far would seem to indicate that:—

Darwin Tulips do not lose in storage.
Hyacinths.
Narcissi seem to make small gains in storage.

Sweet peas—Clara Curtis.

Experiment with chitting in paper flower pots.
Cost per pound, $1.61. Yield per acre, 782·1 pounds,

Lord Nelson.

Experiment in harvesting.
Handpicking, cost per pound, 44 cents. Yield per acre, 704 pounds.
Reaped and threshed per pound, 22 cents. Yield per acre, 768 pounds.

MISCELLANEOUS

CAMPHOR

The usefulness of this plant to the district as a source of commercial camphor has been under test since 1915. The plants have been found to be frost tender and suffer the killing back of all new growth each winter. There is no hope for camphor on this island unless hardier strains can be procured.

TEA

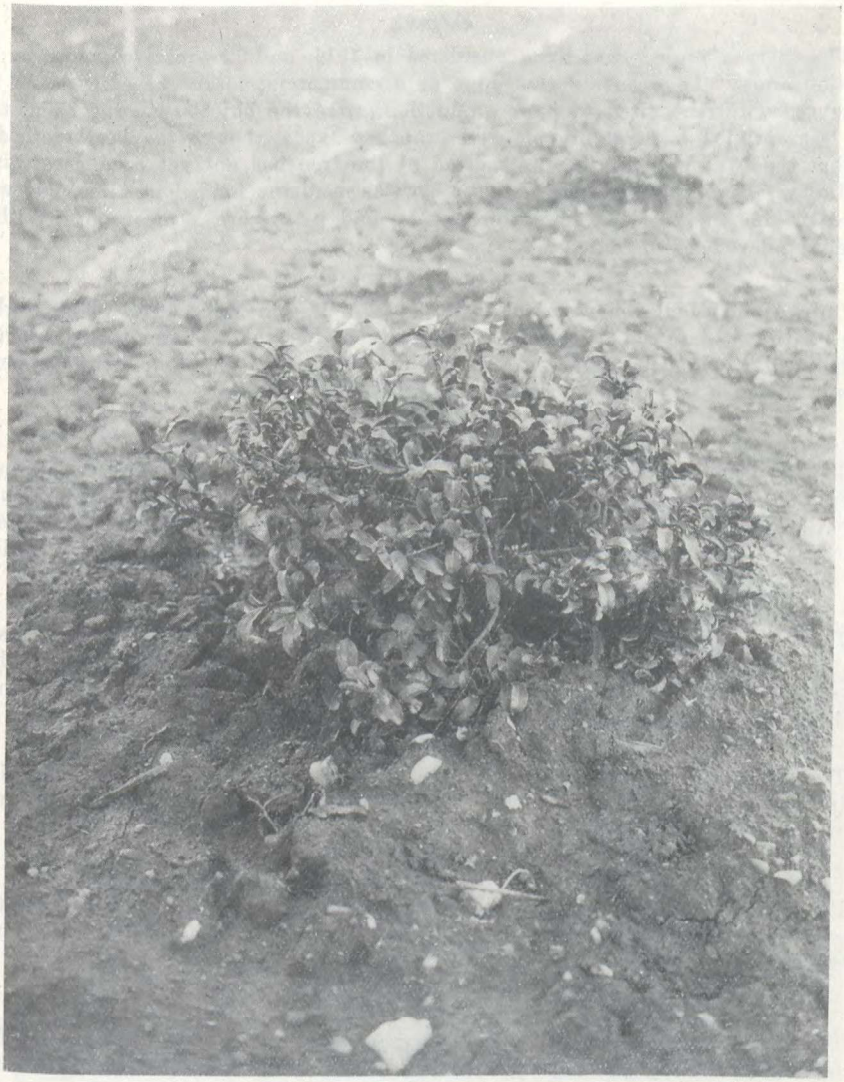
Camellia theifera as a source of commercial tea has been under test since 1915. The plant is perfectly hardy and thrives with little care. Some effort has been made to cure a few of the leaves, but since the several devices used in the drying are not available at the Station, the work cannot be regarded as a success. Further efforts will be made this coming spring. There can be no doubt as to the feasibility of using this plant as a source of tea, but as a commercial proposition it could not succeed with the present price of labour. Tea is possible at its market price only because of the poorly paid Oriental labour; about one-tenth of that paid at the Experimental Station.

LOQUAT

The Loquat was obtained from California in 1915, with the hope that it might be a valuable addition to the orchard crops of the district. Two plants were found to be quite hardy but have not borne fruit to date.

ELAEAGNUS

Varieties of elaeagnus were first planted at the Station in 1915. Of these, *elaeagnus longipes* has been found useful as a small fruit, for fruit juice, for jelly, etc. *Pungens* and *umbellata,* other species of elaeagnus, have not proved their worth, and promise little for the future.



A Tea Plant at the Sidney Experimental Station.

POMEGRANATES

The pomegranate was first tried out in 1915 and succeeding years. The winter killing was so severe that the project was abandoned on the ground that the plant was too tender for the district. The project under slightly different lines of procedure remains for the future.

CASCARA

The cascara project was first considered in 1914, and has received more or less attention since. To ascertain the value as a commercial source of cascara, as well as the type of tree suited to bark production, were the objects sought. The trees have been pruned to straight pole and branched types, though the best method of securing the bark without the destruction of the tree has not yet been ascertained. The Indians have gathered and used the bark as medicine for a long time, but without regard for the tree. A few growers may find in cascara a means of livelihood entirely undeveloped to date.

QUINCE AND MEDLAR

Quince and Medlar have been grown at the Station since 1914. The work is being continued, but the prospects for both are not bright. There is little demand for the medlar, while the quince is very subject to disease. The Japanese ornamental *Cydonia japonica* is the most desirable of all the quince fruits.

BROUSSONETIA

The project was begun in 1915 and was intended to show the usefulness or otherwise of this plant as a source of paper-making material. Certainly the plant has little chance of competing with spruce, firs and hemlocks on this island; yet it is hardy and a rapid grower, and could be used for the purpose intended should the need arise.

RHUS

The test of Rhus varieties was begun in the early days of the Station, to ascertain the degree of usefulness as a source of wood and varnish. The varieties have been secured from Japan. The plants are poisonous to the touch. They have therefore been dug up and burned.

LAVENDER

The plants were obtained from France in 1915 and have been cared for since, to determine their usefulness on this island as a source of lavender oil. The plant thrives, and will no doubt become very popular.

PERSIMMON

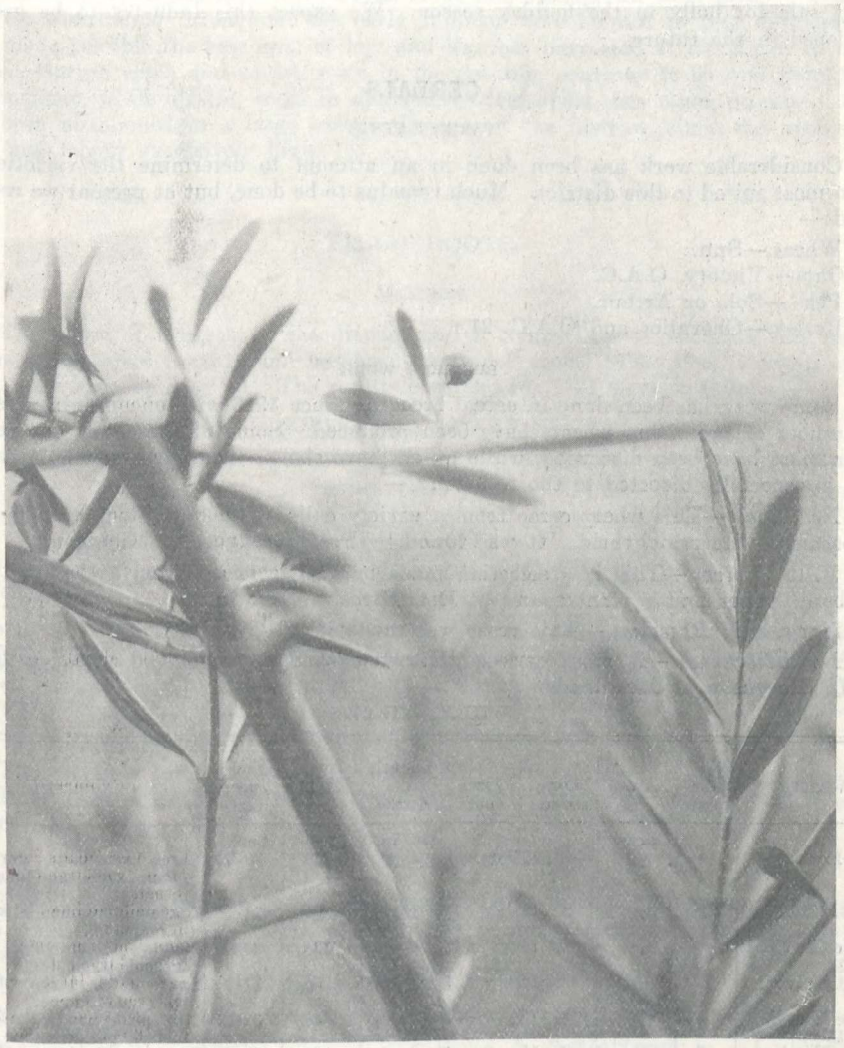
Persimmons from Japan and the United States have received care at the Station. A few fruits have been produced. The future for this tree on the island is very uncertain. It will probably be found too tender for the district.

NECTARINES AND APRICOTS

Test of varieties, disease control and management. This work has been far from satisfactory, since the trees are neither hardy nor disease resistant. Their future here is not bright.

OLIVES

The olive as a food plant has been under trial for years. The trees have made fair growth, continue their struggle for existence and have produced a few fruits. The olive blossoms in late June, and the fruit requires 12 months to develop. Since twelve degrees of frost will destroy the partly grown fruit, which must go through the winter in order to develop during the following summer; and since only one



One of the First Olives Produced in Canada.—Not a Commercial Success.

winter in five is mild enough to permit the development of the crop, there is little likelihood of commercial olive growing being undertaken in British Columbia. The tree has some value as an ornamental, being evergreen.

HOLLY

The commercial value of holly has been considered since 1914. The trees here are making fair growth and production from the standpoint of berries. There is a ready sale for holly in the holiday season. We expect this industry to be greatly developed in the future.

CEREALS

VARIETY TESTS

Considerable work has been done in an attempt to determine the varieties of grain most suited to this district. Much remains to be done, but at present we recommend:—

Wheat.—Sun.
Oats.—Victory, O.A.C.
Peas.—Solo or Arthur.
Barley.—Chevalier and O.A.C. 21.

BREEDING WORK

Some work has been done in cereal breeding since 1916 with encouraging results. A number of promising wheats have been produced. Some of these, for one reason or another, have been discarded, while others have shown themselves worthy. Attention is especially directed to the following:—

Red Rock.—This wheat came from a variety called Plymouth Rock as a mutant or possibly a natural hybrid. It was found by Prof. Sprague, of Michigan.

V.I.S. Velvet.—This is a selection made by L. Stevenson from a cross between Burbank Super and a plant found at Dean Bros. at Keating.

Marquis X Bluestem.—This cross was made in 1916.

Red Kitchener.—A cross between Kitchener and a red-chaffed wheat collected by L. Stevenson at Meadlands.

WHEAT YIELDS

Variety	No. of plot	Area	Date seeded	Date cut	Length of straw	Yield	Yield per acre	Remarks
		acre			ft. in.	lb.	bush.	
Red Rock.....	1	1/10	Nov. 12	Aug. 5	4 9	238	39·6	Large loose heads very uniform, true large long hard kernels.
V.I.S. 131.....	2	1/14	" 12	" 15	3 11	99	23·1	Large uniform heads, kernels large, soft.
Golden Sun V. I. S. 13.	3	1/14	" 12	" 15	4 3	130	30·3	Heads uniform and large, kernels large soft.
V.I.S. Velvet...	4	1/10	" 12	" 5	3 11	56	37·3	Large heads, large soft kernels true to type.
Super Blue V.I. S. 14.	5	1/10	" 12	" 5	3 10	48	32·0	Med. sized heads, small kernels 50 per cent true type.
Red Kitchener V.I.S. 1.	6	1/10	" 12	" 5	4 3	33	44·0	Large heads, large soft kernels. Uniform.
Kitchener.....	7	1/10	" 12	" 8	3 11	26¼	17·5	Med. sized heads, hard kernels.
Marquis X Bluestem.	8	1/10	" 12	" 5	3 9	36	24·0	Med. sized heads, fairly hard small kernels.
Super Marquis..	9	1/10	" 12	" 5	3 8	31	20·6	Badly mixed.
Purple Marquis..	10	1/10	" 12	" 5	4 0	34	22·6	Fair sized heads, uniform. Med. sized kernels, fairly hard.
Marquis.....	11	1/10	" 12	" 5	3 10	27	18·0	Small head and kernel.

FORAGE CROPS

Little work with the forage crops has been undertaken at the Station, owing to the fact that these crops interest a comparatively small number of farmers on the Island. The summers are all too dry for the best development of forage plants, yet the season of 1921 was more favourable, from this standpoint, than many. The few showers distributed throughout the early summer were helpful to root development, and made possible the best crop of hay and legumes harvested at the Farm in many years. Spring vetch and wheat, sown in the autumn, continue to be well thought of for ensilage, while alfalfa, sown in drills three feet apart, has much promise. Corn has been abandoned to a large extent throughout the district, since the nights are cold and labour excessively high.

FIELD ROOTS

MANGELS

The value of mangels to the district and a comparison of varieties was undertaken as a project in 1915 and has been continued since. The plots, 1/220th of an acre, were sown on May 10. The results obtained for 1921 were as follows:—

MANGELS—TEST OF VARIETIES

Variety	Source of seed	Type	Yield per acre	
			Tons	lb.
Giant Yellow Globe	Rennie Seed Co	Yellow globe	39	1,420
Giant Yellow Half Long	" "	Yellow intermediate	22	1,100
Rose Giant	" "	Long pink	21	1,780
Giant White Sugar	" "	Long white	21	1,560
Sludstrup	" "	Yellow intermediate	21	1,340
Mammoth Long Red	" "	Very large red	19	1,820
Yellow Intermediate	" "	Yellow intermediate	18	1,180
Yellow Leviathan	" "	Yellow large	15	1,680
Golden Tankard	" "	Yellow short	14	1,480

The results with mangels vary greatly from year to year. Satisfactory recommendations are out of the question, since no one variety can be depended on to excel every year.

CARROTS

Field carrots have been grown since 1915. These during 1921 were grown under same conditions as the mangels, planted May 6 and harvested November 15, with following results:—

CARROTS—TEST OF VARIETIES

Variety	Source of seed	Yield per acre	
		Tons	lb.
White Belgian	Rennie Seed Co	10	680
Danish Champion	" "	7	960
Danish Yellow Champion	" "	5	1,880

White Belgian and Danish Champion are quite consistent in their behaviour, and are to be recommended.

TURNIPS

Several varieties of turnips were under test during 1921. These were sown on May 6 in uniform plots 1/220th of an acre in extent, and harvested February 17, 1922. The results were as follow:—

TURNIPS—TEST OF VARIETIES

Variety	Source of seed	Type	Yield per acre	How wintered
			Tons lb.	
Morarch	Rennie Seed Co.	Purple top, long.	25 820	90% well
Bangholm	" "	Purple top, globe.	24 1,940	95% well
Ditmars	" "	Green top, globe.	24 24	40% well
Sutton's Champion	" "	Purple top, long.	19 1,600	80% well

SUGAR BEETS

Sugar beets of three varieties were sown in plots 1/220th of an acre in extent on May 6 and harvested February 17, 1922. The results were as follow:—

SUGAR BEETS—TEST OF VARIETIES

Variety	Source of Seed	Yield per acre
		Tons lb.
B.C. Sugar	Dom. Sugar Co.	23 100
Waterloo	" "	22 40
Chatham	" "	18 180

SUGAR BEET SEED PRODUCTION

Three acres of sugar beets were sown for seed production in 1920 and the roots left standing in the field. They withstood the winter without injury, and produced seed in moderate quantity during 1921. The area yielded 1 ton 500 pounds of seed, or 833⅓ pounds per acre. Our observations would indicate that the wintering in the open ground, though a great saver of time, would not be a safe procedure, taking the years together. For instance, swedes were injured greatly when exposed during the past winter.

WESTERN RYE GRASS

Several strains of Western Rye grass seed, obtained from the Central Experimental Farm, were sown in the spring of 1921. Though much difference in the strains is apparent, the work has not progressed far enough to speak with confidence, since the grass has not been cut or records taken.

POULTRY

Poultry work at the Station has always received much attention. White Wyandottes are kept, since they are exceedingly popular on the Island. They lay well, are fine table fowl, and present a good appearance at all times.

By means of trapnests, toe punches and wing bands, records of the birds are accurately kept. By selection of the best layers in the flock, and breeding only from these high producers, it is possible to build up flocks of still greater worth, from the utility standpoint. The importance of the male bird has not been lost sight of, and

males of the highest producing strains only have been used. This line of breeding has been followed for many years, with the result that several hens of great merit have been produced. All of our former records have been broken by Saanich Belle, a hen which produced 307 eggs in her pullet year, 1921. Another hen which has had much to do with the Station's present high production is Lady Victoria. The results of the breeding work may be seen in the flock averages, which quite nearly approach 200 eggs per hen per year.

INCUBATION

A test of incubators and methods, such as variations in humidity, cooling, etc., was begun in 1917. Electric incubators and hens, if all other conditions are right, are unexcelled from the incubation standpoint, but the electric current is not constant, and the various moods of the broody hen are not easy to control. These methods have the advantage in that they are free from the fumes of fuel, oil and coal, so common in many machines.

TEST OF VARIOUS SYSTEMS OF INCUBATION

Incubator	Total eggs set	Number fertile	Per cent fertile	Number chicks	Per cent total eggs hatched	Per cent fertile eggs hatched
Cypher	2,392	1,920	80·3	1,384	57·9	72·0
Armstrong electric	480	376	78·3	194	40·4	51·5
Queen	250	192	76·8	153	61·2	79·6
Jubilee	436	315	72·2	249	57·1	79·0
Vico	324	239	73·7	176	54·3	73·6
Hens	416	356	85·8	271	65·1	76·1

BROODING

The project was begun in 1916 and continued during 1917, 1918 and 1919. In fact we do not regard it as complete at present writing. Various makes of brooders have been compared and their usefulness checked up against hens and the newer electric devices. For the small flock no mechanical device can compete with the mother hen; but for the up-to-date commercial poultry plant the hen as a brooder has little value.

COST OF BROODER OPERATIONS WHEN MACHINES ARE RUN AT FULL CAPACITY

SIMPLEX BROODER—1,000 Chick Size

Number chicks put in brooder	500
Number alive at end of 7 weeks	366
Amount of kerosene used	128 gals.
Cost of oil at 21c. per gallon	$26·88
Cost of brooding chicks per 100	$7·34

RELIABLE BLUE FLAME, 350 Chick Size

Number chicks put in brooder	300
Number alive at end of seven weeks	157
Amount of kerosene used	36½ gal.
Cost of kerosene at 21c. per gallon	$7·66
Cost of brooding chicks per 100	$4·87

Electric Brooder—

Chicks put in brooker	400
Number alive at end of 7 weeks	272
Amount if current used	462.4 K.W.
Cost of current used	$26.35
Cost of brooding 100 chicks	$ 9.69

Electric current required per chick is 1·7 K.W. as near as can be determined without use of separate meter. This at 5·7 cents per K.W. equals 9·69 cents per chick.

All brooders must be run at full capacity to be economical. Small numbers are therefore more cheaply brooded by hens.

BROODING—LITTER ON FLOOR OF BROODER HOUSE

In 1917 and since an effort has been made to compare various sorts of litter on the floor of the brooder house. For the purpose, cut straw, chaff, sand, and sawdust have been used. Sawdust has been found to be dangerous at all times; straw and chaff most desirable after chicks are ten days old. Fine sand is the most suitable material for the first ten days that chicks are in the brooder house. Chicks will pick up grains of sawdust, chaff or other indigestible material if before them, while sand is necessary almost from the start.

COST OF REARING CHICKS

The cost of feeding chicks is a matter which concerns every poultryman. The cost would vary with locality, being relatively high on Vancouver Island.

COST OF FEEDING CHICKS TO 4 MONTHS OF AGE

First Month—200 Chicks—	
22 pounds rolled oats at 6 cents	$1.43
24 eggs at 30 cents	60
70 pounds chick food at 4½ cents	3.15
33⅓ pounds mash at 3 cents	1.00
12 pounds bone at 6 cents	72
178 pounds skim milk at ½ cent	89
12 pounds grit at 2 cents	24
8 logs charcoal at 2 cents	16
	$8.19
Average cost of feed per chick first month	4.09 cents
Second Month. 197 Chicks.	
188 pounds chick-food at 4½	$8 46
39 pounds wheat at 3½c	1 36
353 pounds dry mash at 2¾c	9 71
498 pounds skim milk at ½c	2 49
4 logs charcoal at 2c	0 08
	$22 10
Average cost of feed per chick second month—11.21.	
Third Month. 197 Chicks.	
4 pounds chick food at 4½c	$ 0 18
282 pounds wheat at 3½c	9 17
662 pounds dry mash at 2½c	16 55
422 pounds skim milk at ½c	2 11
4 logs charcoal at 2c	0 08
12 pounds bone, fine, at 6c	0 72
	$28 81
Average cost of feed per chick, third month, 14.61.	
Fourth Month. 197 Chicks.	
344 pounds wheat at 3c	$10 32
1,014 pounds dry mash at 2½c	25 35
366 pounds skim milk at ½c	1 83
10 pounds shell at 2c	0 20
7 pounds bone at 6c	0 42
4 logs charcoal at 2c	0 08
	$38 20
Average cost of feed per chick, fourth month, 19.39.	
Cost of feed for a pullet 4 months old, 49 cents.	

SUMMARY

Number of chicks	Average cost 1st month	Average cost 2nd month	Average cost 3rd month	Average cost 4th month	Total 4 months
200	4·09				
197		11·21			
197			14·61		
197				19·39	
Total					49·3

FEEDING

FEEDING FOR MEAT PRODUCTION

Feeding for meat production in crates has been carried on since 1919. The object was to obtain high quality along with the lowest price possible.

The most satisfactory ration to date is a batter composed of equal parts of fine ground oats and white middlings mixed with sour milk and fed ad lib twice a day. Cost per pound, under 1917 prices for grain, was 9 cents for each pound of gain. Cost per pound of gain 1920 feed prices was 15 cents. Exact figures follow, showing cost for 1921.

CRATE FEEDING

POUNDS OF FEED REQUIRED AND COST OF ONE POUND GAIN

No. of birds	Total weight at start	Total weight at finish	Total gain	Average gain per bird	Total pounds of feed consumed	Cost of feed	Pounds of feed for one pound gain	Cost of one pound gain	Pounds of ground grain used	Pounds of skim milk used	Pounds of grain for one pound gain	Pounds milk for one pound gain
29	98·9	127·10	29·1	1 lb.	380	3·82	13·1	13c.	128	252	4·4	8

Remarks.—The ration used consisted of equal parts of ground oats and white middlings mixed with sour milk.

Value of feed. Ground oats, 2 cents per pound.
White Middlings, 2 cents per pound.
Skim milk, ½ cent per pound.

Value of crate fed roasters, 30 cents per pound.

FEEDING COCKERELS

The feed cost of producing cockerels was undertaken in 1916. The cockerels have been reared under the most approved methods, with the following results:—

		Cents
1916	Cockerels 4 months old produced for	46
1917	" " "	44.7
1918	" " "	54.6
1919	" " "	65.1
1920	" " "	54.4
1921	" " "	49.1

It is interesting to note that the peak of the cost of production was reached in 1919. The mortality of chicks enters into the calculation, thus modifying the figures otherwise obtainable. These figures include cost of chicks that died during the experiment, and include all food eaten, such as grit, charcoal, etc.

FEEDING FOR EGG PRODUCTION

For a number of years the standard food stuffs have been fed in varying combinations. The following suits well and is used at the Station at present.

Mash fed from the hoppers. Bran, 400 pounds, shorts, 200 pounds, oats 300 pounds, corn meal, 100 pounds, beef scrap, 200 pounds, fine salt, 6 pounds.

Whole grain: Wheat 200 pounds, cracked corn 200 pounds, whole oats 100 pounds. Charcoal, grit, etc., always before them.

FEED COST OF PRODUCING PULLETS

To ascertain the cost of producing pullets was the object sought in this project. The figures obtained were identical with those given under the cockerel feeding project above.

HOME PREPARED VS. PURCHASED MIXED MEAL

An experiment to ascertain the value of commercial mixtures was undertaken in 1917. Purchased mixtures, while useful in every instance, were found to be more expensive than home mixed feeds. The last word concerning the undertaking has not been said. Commercial feeds are again under rigorous test, while definite figures will be given concerning this phase of the Station's work in following year's reports.

FEED COST OF PRODUCING EGGS

The cost of one dozen eggs in relation to feed eaten was begun in 1917 and continued since. In this project not only the cost of feed must be considered, but the average number of eggs produced by the laying flock.

FEED COST OF PRODUCING EGGS, 1918

Month	Number of birds	Average production	Pounds grain and mash per dozen eggs	Cost of grain and mash per dozen eggs	Pounds of all feed per dozen eggs	Cost all feed per dozen eggs	Remarks
				cents		cents	
November...	57	3·5	18·48	72·00	23·04	73·00	
December...	57	9·2	6·92	26·76	8·94	27·34	
January.....	56	15·5	5·40	21·00	.....	.....	Birds on free range clover pasture, January to October inclusive.
February....	55	18·2	4·22	14·76	.....	.....	
March.....	55	21·6	4·17	14·62	.....	.....	
April.....	55	19·5	3·51	15·60	.....	.....	
May.....	55	15·6	4·27	13·00	.....	.....	
June.....	50	16·7	4·47	12·76	.....	.....	
July.....	50	16·7	5·06	19·44	.....	.....	
August.....	43	16·5	4·51	17·04	.....	.....	
September...	41	16·5	4·93	18·60	.....	.....	
October.....	42	9·6	9·58	35·88	.....	.....	
Total.....	.....	179·1	75·52	281·50			
Average.....	51·4	14·9	6·29	23·45			

FEED COST OF PRODUCING EGGS 1919

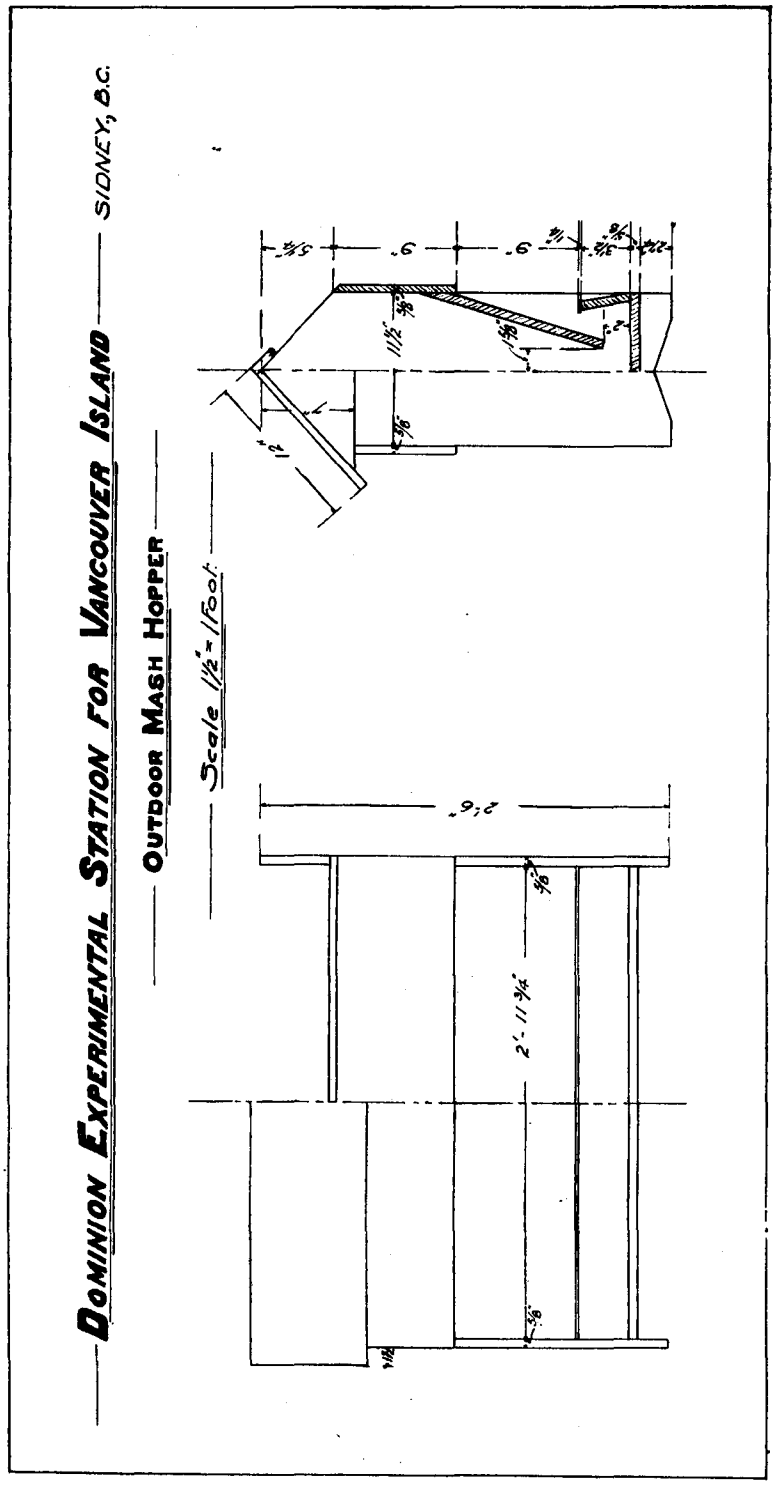
Month	Number of birds	Average production per month	Pounds grain and mash per dozen eggs	Cost of grain and mash per dozen eggs	Pounds of all feed per dozen eggs	Cost of all feed per dozen eggs
				cents		cents
November	50	0·4	8·16	31·08	8·16	31·44
December	50	9·3	9·2	37·12	9·94	37·76
January	50	15·1	7·17	28·56	8·42	29·52
February	49	20·8	5·73	18·11	6·05	19·08
March	49	22·6	5·74	25·80	7·19	26·88
April	46	21·4	4·58	19·68	5·74	20·52
May	40	19·8	5·04	21·87	6·86	22·78
June	37	16·8	5·97	26·40	7·56	26·76
July	37	19·5	4·64	21·96	5·71	22·80
August	33	19·8	4·32	20·40	6·10	21·48
September	31	18·7	4·37	19·67	8·57	21·56
October	31	16·6	4·88	20·53	8·67	21·90
Totals	503	200·8	69·62	291·18	88·97	302·50
Averages	41·6	16·7	5·80	24·26	7·41	25·20

FEED COST OF PRODUCING EGGS, 1920

Month	Number of birds	Average production per month	Pounds grain and mash per dozen eggs	Cost of grain and mash per dozen eggs	Pounds of all feed per dozen eggs	Cost of all feed per dozen eggs
				cents		cents
November	50	12·1	6·36	26·40	11·52	28·20
December	50	22·0	3·36	13·68	6·00	14·88
January	50	20·9	4·08	15·12	7·65	17·52
February	50	20·5	4·20	13·20	6·96	14·76
March	50	23·0	4·20	13·44	7·68	15·00
April	50	21·6	3·48	10·32	5·88	11·28
May	50	20·2	3·84	11·52	6·72	13·20
June	50	17·55	3·84	11·16	7·20	13·56
July	50	18·6	4·56	13·08	7·89	14·40
August	50	17·4	4·80	14·16	8·49	15·60
September	50	14·8	5·04	12·24	8·93	13·08
October	50	10·44	7·68	18·24	13·20	20·76
Totals	600	219·0	55·44	172·56	98·12	192·24
Average	50	18·25	4·62	14·38	8·17	16·02

SUMMARY PRODUCTION AND COSTS, 1918-19-20

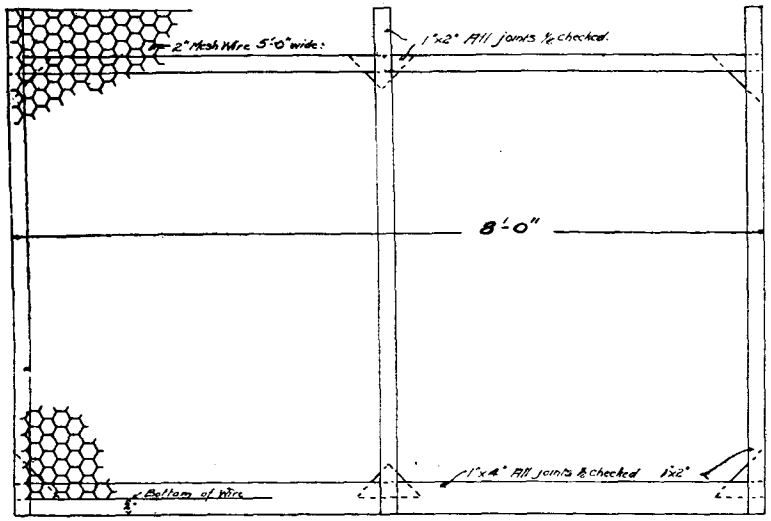
———	1918	1919	1920
Average production	179·1	200·8	219
Pounds grain and mash to one dozen eggs	6·29	5·81	4·61
Cost of all feed per one dozen eggs	23·45 cts.	25·20	16·02
Month of highest cost	Nov.	Dec.	Nov.
Month of lowest cost	June	Feb.	Apr.
Month of highest production	March	March	March
Month of lowest production	Nov.	Nov.	Oct.


DOMINION EXPERIMENTAL STATION FOR VANCOUVER ISLAND
SIDNEY, B.C.
OUTDOOR MASH HOPPER
Scale 1/2" = 1 Foot
2'-6"
2'-11 3/4"

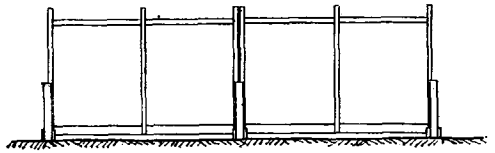
EXPERIMENTAL STATION FOR VANCOUVER ISLAND. SIDNEY. B.C.

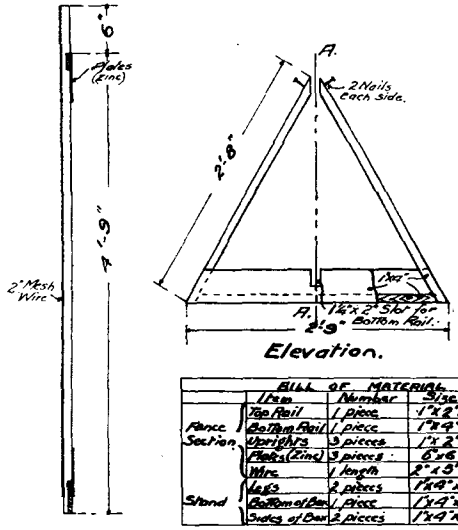
PORTABLE POULTRY FENCE.

Scale 1" = 1 Foot.



Front Elevation.





Elevation.

Section thro' "A-A."

BILL OF MATERIAL

	Item	Number	Size	Remarks
Fence Section	Top Rail	1 piece	1"x2"x8'0"	All joints
	Bottom Rail	1 piece	1"x4"x8'0"	To be
	Uprights	3 pieces	1"x 2"x3'8"	½ Checked
	Nails (Zinc)	3 pieces	6"x6"	Cut in two, clinch
	Wire	1 length	2"x5'-0"	Cut 8'0" long
Stand	Legs	2 pieces	1"x4"x2'6"	
	Bottom of Box	1 piece	1"x4"x2'7"	
	Sides of Box	2 pieces	1"x4"x2'9"	

End Elevation.

FEEDING HENS VS. PULLETS IN EGG PRODUCTION

The project was undertaken in 1918-19 and has been continued since. Records on pullet flocks have been compared with records on yearling flocks. The feeding and housing have been identical. Results to date are as follow:—

HENS v. PULLETS IN EGG PRODUCTION

Year	Average number of hens	Average number of pullets	Average number eggs from hens	Average number eggs from pullets
1918–19	31·5	93·0	109·66	170·71
1919–20	52·5	159·5	99·33	195·77
1920–21	88·9	258·9	127·75	195·06

It will be noticed that pullets are much superior to hens from the standpoint of egg production. Work at the Station would show, however, that from the breeding standpoint hens are much superior to pullets. Chickens hatched from hen eggs possess more vitality and have greater viability.

BREEDING

THE PRODUCTION OF BREEDING COCKERELS

The production of pedigreed breeding cockerels in order to supply the public with male birds of "bred-to-lay" strains, has been regarded as a definite object since the inauguration of our poultry work. Little attention has been given to exhibition points, but the development of utility stock has been stressed.

The development of high producing strains or families was begun in 1916. Strains that would produce 250 eggs in pullet year and 550 eggs in three years, was the object sought. Line breeding was carried on for the development of two strains with mating of highest producers. One hen, No. A 5, has produced 261 eggs in pullet year. She has six daughters. In 1918 these daughters produced in their pullet year, ending in 1919, the following records: 274-214-300-292-243-201.

Daughters of A 5 hatched 1919 pullet year ending 1920 made the following records: 229-217-201-226-282-239-256.

Pullets hatched 1920, pullet year ending 1921, gave records as follow: 253-214-174. Several birds of promise have not completed their pullet year.

Table showing A 5 and her daughters:

1917	1918 Eggs	1919 Eggs	1920 Eggs
	274	229	
	214	217	253
A 5	300	201	
261 eggs	292	226	214
	243	282	
	201	239	174
		256	
Average	254	232	214

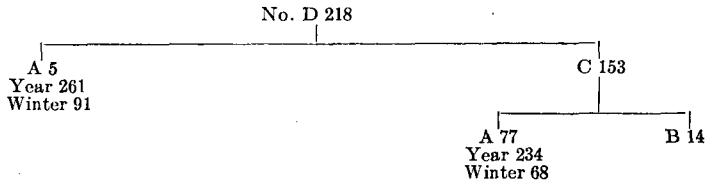
It will be noticed that there has been a slight falling off in egg yield. This may be attributed to the fact that a different male was used in 1919 from that used in 1918 on A 5. Possibly A 5, as she grew older, lost vitality, but the change of males may have been entirely responsible for the lower production. Another of our outstanding females is closely related to B 162. The records of B 162. her daughters

and granddaughters, all of which were sired by the same male, No. D 218, are here given:—

Hen Number		Winter record	Pullet year record
B 162		85	257
Daughters of B 162	E 638	85	288
	E 702	98	258
	E 913	51	Died May 21
	F 208	11	Not complete. Daughter of E 638
Granddaughters of B 162	F 75	52	Daughters of E 913
	F 110	67	
	F 129	29	
	F 155	88	
	F 205	56	
	F 231	17	

It is worthy of note that E 702, the heaviest winter layer, produced no chicks: all her eggs were infertile. From No. 638 5 chicks were raised, three males and one pullet were killed for eating, and one pullet No. F 208, was put in the laying house. From No. E 913, the lowest winter producer (51 eggs) eight birds were raised, 2 cockerels and 6 pullets. The pullets made a fair showing during the winter, averaging 61 eggs each. The average winter production of B 162's daughters was 78 eggs; her granddaughters gave an average of only 45 eggs. The difference may be accounted for to some extent by the fact that the daughters were from eggs laid during the second laying year and after a two months' rest, while the granddaughters were hatched from eggs laid after a heavy winter's work.

PEDIGREE OF MALE

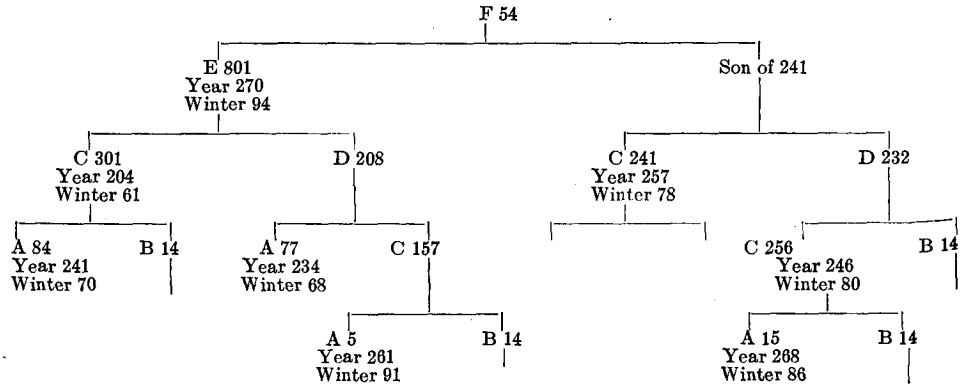


For the season of 1922 the following breeding pens were made up.

Pen 1. The females in this pen have been bred from hens laying not less than 200 eggs in their pullet year for four generations.*

Hen Number	Winter record	Pullet year record	Sire's dam's record	Sire's grandam's record	Dam's record	Grandam's record
C 279	94	300	231	–	261	–
D 325	86	250	261	231	257	–
D 339	78	227	261	231	257	–
D 400	69	229	234	231	261	–
D 511	91	289	261	231	257	–
E 819	77	253	243	231	261	–
E 824	57	241	261	234	300	261
E 875	78	256	–	–	–	–
E 888	83	221	261	231	291	261
E 895	80	237	261	231	225	234

PEDIGREE OF MALE

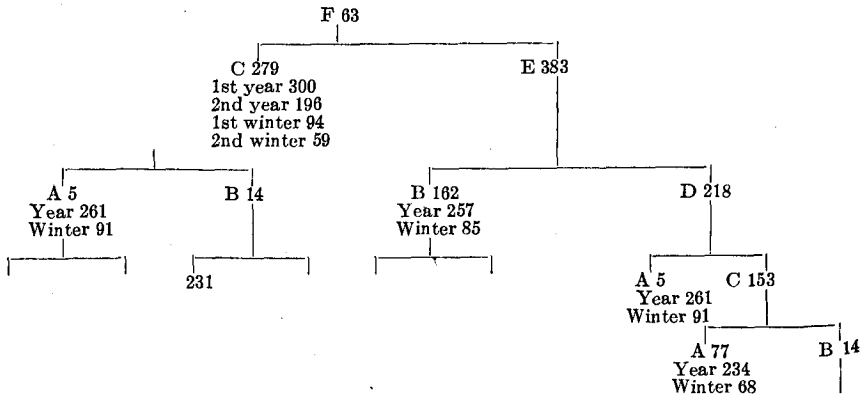


*To avoid misunderstanding in connection with the statement that all birds in this pen were from hens laying not less than 200 eggs in their pullet year for four generations it may be stated that only pen pedigreeing was followed in some cases, hence the impossibility of filling the actual production in the case of some individuals. This also applies to the pens that follow.

Pen 2.—All birds bred from 200-egg hens for 4 generations.

Hen Number	Winter record	Pullet year record	Sire's dam's record	Sire's grandam's record	Dam's record	Grandam's record
D 450	70	257	–	–	–	–
E 616	93	275	–	–	–	–
E 623	82	276	–	–	–	–
E 638	85	288	261	234	257	–
E 642	64	234	274	231	235	254
E 646	76	263	246	268	236	–
E 861	98	287	–	–	–	–
E 899	89	307	–	–	–	–
E 901	86	241	243	–	267	–
E 938	71	222	234	–	204	241

NUMBER AND PEDIGREE OF MALE

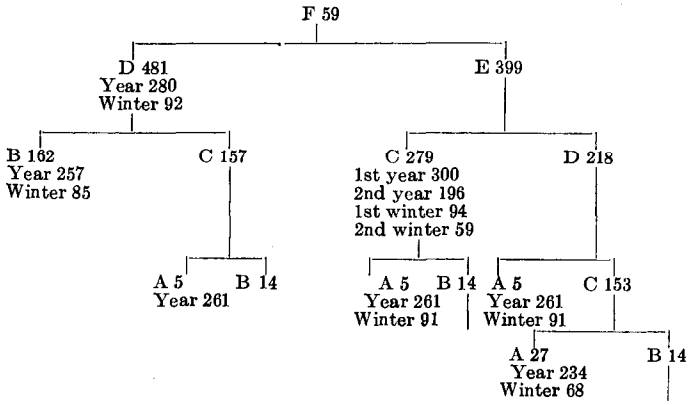


PEN 3

Hen number	Winter record	Pullet year record	Sire's dam's record	Sire's grandam's record	Dam's record	Grandam's record
D 439	77	245	234	231	251	–
D 526	79	267	–	–	–	–
E 620	50	231	274	261	210	254
E 801	94	270	234	–	204	241
E 806	78	257	246	268	236	–
E 813	91	290	–	–	–	–
E 815	105	288	–	–	–	–
E 866	90	271	–	–	–	–
E 885	83	244	256	–	221	243

The ancestors of birds in this pen for four generations laid over 200 eggs in their pullet year.

NUMBER AND PEDIGREE OF MALE



PULLET YEAR RECORDS OF TEN BEST PULLETS FOR THE FOLLOWING YEARS

1916-17		1917-18		1918-19		1919-20		1920-21	
No. of pullet	No. of eggs laid	No. of pullet	No. of eggs laid	No. of pullet	No. of eggs laid	No. of pullet	No. of eggs laid	No. of pullet	No. of eggs laid
15	268	167	267	279	300	511	289	899	307
5	261	162	257	280	291	513	281	813	290
34	258	124	256	204	274	481	280	638	288
23	254	118	251	241	257	526	267	815	288
4	243	113	239	256	246	505	257	861	287
12	243	164	236	202	244	401	256	623	276
84	241	117	234	281	243	450	256	616	275
77	234	112	231	261	235	322	254	972	272
16	234	175	227	229	226	378	254	866	271
24	226	127	225	258	225	412	253	801	270
Total...	2,462	.....	2,423	.....	2,541	.....	2,647	.....	2,824

BIRTH MONTH FOR PULLETS

When chicks should be hatched for most profitable egg production is a problem confronting every poultryman. Its answer was undertaken in 1920. Records on March, April and May-hatched birds have been kept.

CHICKS RAISED IN 1920

March Hatch.—Feed consumed per bird, 124·4 pounds. Cost of feed per bird 1920, $4.17. Average number of eggs, 188. Value of eggs, $10.08. Profit over cost of feed, $5.91.

April Hatch.—Feed consumed per bird, 126·2. Cost of feed per bird, $3.90. Average number of eggs, 195·6. Value, $10.42. Profit over feed cost, $6.52.

May Hatch.—Feed consumed per bird, 124·1 pounds. Cost of feed per bird, $4.14. Average number of eggs, 201·8. Value, $10.38. Profit over cost of feed, $6.24.

CHICKS RAISED IN 1921

March Hatch.—Feed consumed per bird, 149·9 pounds. Cost of feed per bird, $3.03. Average number of eggs laid, 203·8 Value, $8.14. Profit over feed cost, $5.11.

April Hatch.—Feed consumed per bird, 142·3 pounds. Cost of fed per bird, $2.83. Average number of eggs laid, 219·4. Value, $8.62. Profit over feed cost, $5.79.

May Hatch.—Feed consumed per bird, 137 pounds. Cost of feed per bird, $2.72. Average number of eggs laid, 191·9. Value, $6.71. Profit over feed cost, $3.99.

Results would indicate that April is the most profitable birth month for pullets. This is in keeping with the experience of many poultrymen.

HENS VS. PULLETS AS BREEDERS

A comparison of the utility of pullets and mature hens in breeding was undertaken in 1920, with interesting results.

March, 1920—
Hens Eggs incubated.. .. .. 488 Fertile, 80·7 per cent
Pullets " " .. .. 570 " 78·4 per cent

1921—
Hens " " .. .. 362 " 83·9 per cent
Pullets " " .. .. 928 " 74·9 per cent

Since hatchability is one thing and viability another, the following table should be considered in connection with this project:—

THREE YEARS SUMMARY OF VIABILITY OF CHICKS FROM HENS AND PULLETS

Ages	Number of chicks hatched	Number of chicks alive July 1	Per cent chicks alive July 1	Number of chicks required to raise 1 chick July 1
Hens	2,100	1,527	72·7	1·3
Pullets	3,107	1,156	37·2	2·6

The above figures are not the results obtained from all chicks hatched during the past three years, but from those only that were reared under the same conditions as to brooder, temperature and feeding. The chicks hatched from pullet eggs lacked vigour from the first day; they were also uneven as regards size when removed from the incubator. Those hatched from the hen were of a more even size, much stronger in every way and feathered up very much quicker.

ACCLIMATIZATION

An acclimatization test with poultry was begun in November, 1920, and though not complete some interesting information has been gained. In October two pens of 10 birds each were sent to Ottawa in order to compare the production, and a third pen of similar breeding was put on test at this plant. One of the Ottawa pens was entered in the Canadian contest and was known as pen No. 25. The other Ottawa pen was kept by a private family upon the same farm. The feeding of the three was practically the same, except that the private pen received table scraps in their ration. The totals of feed and production of the three pens are:—

	Sidney pen	Contest pen Ottawa	Private pen Ottawa
Total eggs	2,190	1,598	2,154
Average	219	159·8	215

The details of the pens follow:—

Eggs produced by pen kept by private individual at Ottawa:

November	131 eggs.		Average 13·1
December	265 "		" 26·5
January	227 "		" 22·7
February	174 "		" 17·4
March	216 "		" 21·6
April	204 "		" 20·4
May	191 "		" 19·1
June	177 "		" 17·7
July	170 "		" 17·0
August	168 "	1 died	" 16·8
September	120 "		" 12·0
October	123 "		" 12·5
Total	2,166		

Total number of eggs produced from November 1, 1920, to September 30, 1921, 2,001.

Total number of eggs produced from November 1, 1920, to October 31, 1921, 2,166.

Total cost of feed, purchased and fed, scratch feed and dry mash, $19.05. Cost of eggs per dozen on purchased feeds 10½ cents.

N.B.—Aside from feeds purchased, all other feed consisted of table and kitchen garden refuse. One pullet died August 18, 1921, and was not replaced; hence the total is really short the production of one bird for 2½ months.

CHECK PEN SIDNEY

Month	Birds	Total eggs	Average eggs	Pounds of feed consumed per bird
November	10	121	12·1	11·7
December	10	220	22·0	11·0
January	10	209	20·9	13·2
February	10	205	20·5	11·9
March	10	230	23·0	14·9
April	10	216	21·6	10·6
May	10	202	20·2	11·4
June	10	175	17·5	10·5
July	10	186	18·6	12·3
August	10	174	17·4	12·3
September	10	148	14·8	11·0
October	10	104	10·4	11·5

Remarks.—Throughout the year not a single death took place. The total number of eggs laid was 2,190, or an average of 219 eggs per bird. The amount of feed required per bird for the year was 142·3 pounds. Average number of eggs laid per bird for the four winter months, 75·6. Highest record, 291 eggs; lowest record, 144 eggs.

SHIPPING EGGS AND CHICKS

Baby chicks and eggs were shipped from Vancouver Island Station to Lacombe, Alberta.

Comparative results from shipping eggs, baby chicks and pullets from the Experimental Station, Sidney, B.C., to the Experimental Station, Lacombe, Alberta, in 1921:—

DETAILS OF CHICK AND EGG SHIPMENTS AND PULLETS RAISED AT SIDNEY AND LACOMBE

Nature of shipment	Date	Number of eggs	Number of chicks	Number dead in 11 days	Number alive Nov. 1	Weight of 10 pullets Nov. 1
Baby chicks	Mar. 26	.....	100	46	41	
Baby chicks	May 13	.....	100	62	28	48 lb.
Eggs	April 19	100	46	.....	30	47 lb.
Pullets	Nov. 1	.....	10	.....	.....	46½ lb.

The March 25 shipment arrived on a cold, stormy evening, but probably was kept in a warm place during the whole journey. The May 12 shipment arrived in much warmer weather and may have been exposed in transferring at Vancouver and Calgary. At any rate it suffered very much more from chill than did the March 25 shipment. The baby chicks arriving at Lacombe on May 12 and those hatched at Lacombe on May 11 were supposed to be each the product of 100 eggs. The first 100 eggs were put in the incubator at Sidney and the product shipped to Lacombe on hatching. The second 100 eggs were shipped to Lacombe on the date the first 100 were put in the Sidney incubator, and the eggs, immediately on arrival at Lacombe, were placed in incubators. By some misunderstanding 100 baby chicks and not the product of 100 eggs were shipped to Lacombe. Thus, on November the 1st there were 28 live chickens from the 100 baby chicks and 35 live chickens from the 100 eggs. The comparison is very much in favour of the shipping of eggs rather than chicks. It would probably require from 180 to 200 eggs to produce the 100 baby chicks shipped. As there is a difference of only 1½ pounds between the weight of the ten

heaviest and ten lightest pullets at practically matured weights, this is not so outstanding as the difference in the shipping of baby chicks. The difference in weights is so slight that it may be disregarded entirely and put down as a matter of chance, which might be reversed at another time.

BEES

A few colonies of bees have been kept at the station, but apart from the production of extracted honey no experimental work has been carried on.

The few colonies kept year by year since the beginning of the experimental station work, have been kept to test the value of the district as a honey producing section. There is much variation from year to year, but the cool nights with considerable cloudiness are not conducive to great honey flow. It is proposed to try out various sections on the island through out-apiaries in succeeding years.

SUMMARY OF PROFIT AND LOSS ACCOUNT

Dr.		Cr.	
To 9 colonies bees at $10	$90 00	By 272 pounds honey at 22 cents	$59 84
6 Queen bees at $2	12 00	3 colonies bees at $15	45 00
100 pounds sugar	8 50	5 colonies on hand, $10	50 00
Wages, 136 hours at 35 cents	47 60	Balance	3 26
	$158 10		$158 10
To balance	$ 3 26		

ILLUSTRATION STATIONS

Some work has been done to locate proper illustration or sub-stations on the island. The work cannot be regarded as fairly begun, yet interest is being manifested.

EXTENSION AND PUBLICITY

At the Victoria Exhibition the Experimental Station put on an exhibit, concentrating on poultry. A colony house, with yards and the several devices used at the station were on exhibition. A pen of ten hens were being fed, trapnested and cared for as at the Farm. A similar exhibit was put on at Saanichton, together with an exhibit of bees and appliances. The bees were so arranged in an observation hive that the workers could be seen by all interested. At the same fair an exhibit of horticultural products was shown. Again at Sidney an exhibit of bees, honey, wax and appliances was set up.

The station's exhibition work has been unlike that of other years, in that this year efforts have been concentrated on one phase of agriculture at the one exhibition, with the hope of drawing greater attention to the work than would otherwise be likely.

The work of the year has been somewhat broken owing to the retirement of the previous superintendent in mid-season, and its having to be taken up by another. Improvements have been undertaken in grounds at the superintendent's house, in approaches to roads and drives, etc. A small dwelling has been constructed for foremen and the buildings kept in repair.

EXCURSIONS

Visitors, picnic parties and excursions have been frequent during the summer. Each day brings its own quota. Although the staff cannot at many times give as much attention to these as is desirable, yet all visitors are made welcome in their visits to the farm.

PRESS

The local papers have been utilized to a considerable extent. The Sidney Review has received an article each week touching many phases of agriculture, while other papers have been kept in touch with the farm work from time to time.