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FRUIT RANCHING

IN

BRITISH COLUMBIA

AGENTS.

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FRUIT RANCHING

IN

BRITISH COLUMBIA

BY

J. T. BEALBY, M.A.

CONTAINING THIRTY-TWO FULL-PAGE ILLUSTRATIONS FROM PHOTOGRAPHS.

LONDON

ADAM AND CHARLES BLACK

1909

The writer's thanks are due to R. M. McQuarrie, Esq., and N. Brydges, Esq., both of Nelson, B.C., for the loan of Photographs reproduced in the following pages.

PREFATORY NOTE.

"And so you are really going?" said Walter, as he settled himself in an easy chair in front of my study fire.

"Yes," I answered. "I am. I have decided."

Walter reflected a moment. Then he observed, "I don't know but what you are right." Yet his tone was not the tone of absolute conviction, as his next remark showed. "But don't you think, all the same, that you could grow fruit in England? Many people do. You know that hundreds of acres are being planted with apple trees in Nottinghamshire and Lincolnshire."

"Yes: I am quite aware of that. But what are the prospects? Consider the price of the land—£100 per acre, anywhere within easy reach of London—perhaps more. Then, suppose you plant your orchard. After waiting the eight or ten years while it is growing up, you may at the end of that time find it is spoilt by the erection of factories, belching out smoke and other impurities, poisoning the atmosphere all round your trees."

"True, that might happen" admitted Walter, thoughtfully. "But," he added, after a pause, "why not go farther into the country, where there is no risk from smoky factories?"

"That would appear to be the more sensible thing to do: but there are so many objections."

"Such as?" queried Walter.

"The same thing as before—the high price of land. Even in the country—say well over one hundred miles from London—you have to give £50 an acre for land that is suitable for fruit-growing, and I have known instances quite recently of land for that purpose fetching £80 per acre, and that was over one hundred miles from London."

"That does seem a lot of money," said Walter. "But even then, would it not pay?"

"I doubt it. The seasons are uncertain. Almost every spring frosts do damage. There are many bird enemies. Rates and taxes are increasing every year. The risks are too great for the large amount of capital at stake."

"Could you not rent land, then, instead of buying it outright?"

"That wouldn't do," I rejoined. "As my trees began to yield, the landlord would be sure to put up the rent. There would be no guarantee against that, and no security of tenure either. I might also be turned out of the place just when it had reached its most profitable stage."

"Wouldn't a long lease prevent that?" asked Walter.

"I object to leases, and above all things to long leases. Circumstances change rapidly nowadays, and if you are tied down by a long lease you are unable to adapt yourself to them as they change. You cannot take advantage of opportunities that may crop up in your way."

"How is it, then, that we have to pay so much for fruit? Why, you can't get an apple that is worth eating for less than 4d. a pound," urged Walter. "Surely it must pay to grow them at that price?"

"So it would. Only, 4d. a pound is not the price the grower gets. Twopence a pound is a very good price to him; often he thinks himself lucky if he can get as much as 1¼d. per lb."

"Well, even at that rate," interposed my friend, "you would get—how much per acre?"

"Let me see! Say we get four stones off each tree, and there are fifty trees to the acre, and apples at 1s. 6d. per stone. It works out at £15. And even if you take the top price, and put it at half-a-crown a stone, the price Bramleys and Blenheims often sell at, you make only £25 per acre."

"But surely that would pay?" suggested Walter.

"Pay! You are forgetting that this is the gross return. There are all the expenses to put against that—interest on capital, labour, railway rates, losses of fruit, uncertainty of the markets, bad debts, cost of boxes or hampers,

middlemen's commissions, all that sort of thing."

"And how much would all that come to?"

Walter seemed determined to get to the bottom of everything.

"Well, really, I couldn't tell you. It would vary much from year to year, and would not be the same for any two men, even supposing they were working in the same district. I really couldn't tell you. But it would amount to a pretty high proportion."

"Then, in your opinion, an orchard is not exactly a Garden of Eden?"

"Not in England, at any rate."

"Is it so anywhere—in any part of the world?"

"Yes: in Canada. At least, so I am told. I mean in British Columbia. It certainly is a paying occupation in Oregon and Washington and other Western States of America. And in the Okanagan district of British Columbia it is equally profitable. In those parts of the world the industry is old enough to have been thoroughly tested, and the results are satisfactory."

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FRUIT RANCHING IN BRITISH COLUMBIA.

CHAPTER I.

Liverpool to Montreal.

It was about the middle of March when we landed at St. John, and the winter had been one of unexampled severity throughout Canada. The snow still lay deep all over the country as we journeyed towards Montreal. In fact, except for a few hours west of that city, where the snow had partly melted, exposing the bare earth in patches, unbroken snow extended all the way to the Rocky Mountains. Owing to this fact, we were unable to see very much of the real aspects and features of the country.

After a long and weary wait at St. John, in a cold and cheerless shed, draughty and of vast size, and after several false starts—in fact, owing to there being nobody to give us any information, we naturally assumed that every train which backed into the station alongside the shed was our train—we at length got away. After the superabundance of ready, if not disinterested, assistance which the railway traveller receives at an English railway station, we felt rather bewildered at the lack of porters to lend us a hand with our traps and chattels.

We were going out to settle in Canada. We were emigrants, or, as the Canadian Pacific Railway prefers to call them, colonists. Consequently, when we took train we travelled in a colonist car—"car" being Canadian for passenger carriage or coach. This vehicle has a platform at each end, and there is a short gangway, with a protecting rail on either side, which connects the platform at the rear end of one car with the platform at the front end of the next car. By this means you can walk from one end of the train to the other as it travels along. In the cars the seats are arranged two by two, facing one another, on either side of the central passage. At night the seats pull forward until they meet, and so make a bedstead, on which you can spread your rugs and wraps, and, though the bed is rather hard, you can generally contrive to get a fair night's rest. This arrangement provides, of course, room for only two out of the four passengers who occupy each compartment. The other two have to climb up on to a kind of broad shelf, which is pulled down from the roof of the car until it sticks out horizontally above the bed made by the two seats below.

The scene of subdued bustle which was presented at night, when everybody began to prepare for sleep, was only equalled, or rather it was excelled, by the buzzing of the same human hive just before breakfast time in the morning, when the factotum of each travelling party began to struggle in good humour for an opportunity to deposit his kettle or teapot on the stove.

The impressions we gathered during the course of our sixteen or seventeen hours' run from St. John to Montreal were necessarily fleeting. Everywhere there was snow—deep and dazzling white. Everywhere the prospect of the champaign was shut in by forests.

The villages came at fairly close intervals, and generally had an open, warm, and cheerful appearance. The houses were apparently all constructed of wood, and generally painted white. Their windows were flush with the wall, and along the front, and often along one or both sides as well, ran a stepped verandah. The verandah, we subsequently learned, is as invariable an adjunct of a Canadian house as the stoop is of the South African Boer's house. With their stacks of split logs for winter fuel, their air of quiet, easy-going prosperity, these villages and dwelling-houses gave a succession of gentle tugs at our heart strings, which were hanging loose and lacerated after their recent rupture from the soil in which they had been rooted from infancy.

At the outskirts of one or two of the little towns we observed cabs, mounted, not on wheels, but on runners: they were, in fact, sleigh-cabs. Sleighs proper were frequent on the landscape. Very curious to our unaccustomed eyes it was to see a black dot moving afar off across a level expanse of snow—a level expanse, framed round with a border of forest-trees, showing that it was a lake. After a while, as we drew nearer to the point for which the black dot was also making, we became aware that it was a sleigh. We could just see the horse's legs going trot-trot-trot, and just discern two figures in the sleigh, muffled up to the nose in furs. And to think they were thus driving iron-shod over the deep waters!

The thermometer ranged most of the time but very little above freezing-point; yet we did not feel unpleasantly cold. Certainly not in the railway cars, for they were rather too hot and close and stuffy; nor yet, again, when the train pulled

up at some wayside station for the engine to take in water. On such occasions, all the passengers tumbled out like mice escaping from a corn-bin: it was such a delightful change to be able to stretch one's legs for a minute or two. And all the time the sun shone brightly; and somehow, when the sun does shine in Canada in winter, and especially when it shines on virgin-white snow, it glitters with a peculiarly brilliant lustre.

The most characteristic feature of the landscape east of the St. Lawrence and Montreal appeared to us to be these beautiful lakes, with park-like shores rising into low, gently-swelling hills and offering vistas of smooth lawns of unsullied whiteness. After we left Montreal, the country was flatter and more open. It was evidently of older settlement. Every now and again there was a house built of brick. This, together with fields and fences and roads, carried our minds back across the watery wastes of the Atlantic to a dear old country. Here, in this part of our journey, the snow was beginning to melt, and in several places we saw the cows and other cattle standing on patches of brown earth outside the byres, in which they had been shut up for so many weeks. There was not a scrap of anything for them to eat; but the fresh air would do them good, and, poor things, they looked spiritless and dejected enough, as they feebly whisked their tails in the cheering sun.

C.P.R. TRANSCONTINENTAL TRAIN.

CHAPTER II.

Winnipeg to Nelson.

The last night of our journey before we reached Nelson was spent in the Crows' Nest Pass of the Rocky Mountains. The finest part of the pass was unfortunately traversed in the middle of the night while we were all asleep. And even if we had not been asleep, the pass is, I am told, so narrow that you can see but little of its grandeur from the window of a passenger car. The scenery is remarkably fine, and the route presents several engineering feats worthy of attention. At one place the railway line describes a complete loop, the upper end of which lies almost vertically above the lower end. The finest scenery in this part of the Rocky Mountains—scenery that is truly entitled to be described as magnificent—occurs in the Kicking Horse Pass, by which the main line of the C.P.R. pierces the range on its way from Winnipeg to Vancouver.

The name of the Crows' Nest Pass is in no way connected with the familiar bird. The Crows are, or were, Indians, and the word "nest" is a rough translation of an Indian word for "encampment." This particular "nest" of the Crow Indians is one of ensanguined omen in the annals of Redskin warfare. It was here that a large band of Crow Indians were surprised and massacred by a larger force of their hereditary enemies, the Blackfeet.

But though we did not obtain good views of the Rocky Mountains proper, we did see something of the Purcell and Selkirk Ranges, two of the flanking ranges on the west side of the Rockies. At that time, the end of March, the mountains were still draped in snow, or, more strictly speaking, in snow and ice, for the summits of both these ranges are, as a rule, sharp cut and rugged, even in places serrated—or notched like a saw. Glaciers form on them, and remain permanently, although as a rule the loftier summits during the summer shake off their snowy hoods and bare their brows to the sparkling airs of British Columbia.

These mountains we saw from Lake Kootenay, which they fence in on east and west. It was on this lake that we travelled the last fifty or sixty miles of our journey before reaching Nelson. It is a long, narrow sheet of water, stretching north and south for eighty miles by some three to five miles wide, and is set deep in a framework of rocky mountains. I could readily have fancied myself transported again to one of the Norwegians fjords. There is in the two regions the same aspect of sternness and adamantine immovability, the same comparative absence of the subduing hand of man, the same sombre draping of dark pine woods, the same sullen sleep of the unfathomable waters at their feet. The general impression, not exactly one of magnificence, owing to the absence of towering altitude in the mountain peaks, is yet that of sublimity, of grandeur, of power. The mountain girdle is massive, its continuity unbroken; its features are devoid of softness, of allurement, of winning charm. I do not mean that these Kootenay Mountains and this Kootenay Lake lack attraction. I mean that it is to severe and austere moods of the imagination that they appeal, rather than to soft and tender sensibilities. The poetic effect is produced; but it is an effect that is sympathetic to the mind of a Crabbe rather than to the mind of a Longfellow, typical of a Browning rather than of a Tennyson.

The boat by which we travelled from Kootenay Landing, at the south end of Kootenay Lake, to Nelson, near the western extremity of the west arm of the same lake, was a stern-wheeler, shaped like the boats which ply up and down the Mississippi. The "boat" proper is flat-bottomed and very shallow. Above it are constructed three or four oblong, round-ended stories, to contain the general cargo, the passengers' dining-saloon and other apartments, the sleeping berths, and the skipper's steering-box or outlook. These boats, at all events on the inland waters of British Columbia, draw only a very few feet of water at the bow. This is to allow them to push their noses on to the sandy shore when called upon to land or take on board passengers or cargo. The country is not yet old enough to afford landing-stages at every stopping-place. Sometimes, indeed, a landing-place is marked by only a single, solitary house; often by not more than two or three houses at the most.

And how small, how toy-like, a single house looks when clinging in isolated sovereignty to the foot of these mountain masses! Nor is a village in a similar situation able to invest itself with any higher dignity than such as belongs to the doll-like. So dwarfing is the effect of stupendous masses of sky-aspiring rock when contrasted with the work of human hands!

When we entered the west arm of Kootenay Lake at the narrow gateway of Procter, the lake instantly assumed a different character. If hitherto we had been steaming up a Canadian Norwegian fjord, we now began to navigate a Canadian Scottish loch. The mountains were more rounded in outline; their flanks, while not less steep, wore a more friendly and

genial aspect; the strips of land at their feet were broader and had a more home-like look. Across the hollows of the mountains there hung in many places a thin vapoury haze of deep and vivid purple, softening the outlines, and blending lake, mountain, and sky together in one poetic dream. Yet, owing to the chilly nature of the evening and the darkling hour at which we began our brief journey down the west arm, the general impression left upon us, wearied as we were with fourteen days of continuous travel, could not very well have been other than disappointing—disappointing, I mean, from the special point of view of the prospective fruit-rancher.

I knew there were fruit ranches on these shores, I knew the names of men who owned them. I had seen the fruit which grew on them—fruit of great excellence. We could not see them, it was true; yet there they must be.

SLEIGHING IN WINTER. ***W. Notman and Sons.***

CHAPTER III.

Fruit-growing Capabilities of the Kootenays.

Any sensible man who contemplates investing brain, muscle, and capital in British Columbia, whether in mining, lumbering, or fruit-growing, will naturally seek information from the Agent-General of that province in London. And I am sure, from the present distinguished holder of that office, the Hon. J. H. Turner, formerly Prime Minister of British Columbia, any and every inquirer will always receive patient and courteous attention, and be given true, disinterested information, as well as sound advice.

When I myself was discussing with him the subject of fruit-growing in the province which he represents, he said, speaking of the flavour of apples: "In my opinion the finest-flavoured apple is that grown in England, the next in point of flavour is the apple grown on Vancouver Island—but in saying this I may be prejudiced, for forty years of my life have been spent on that island—and after that comes the apple of the interior of British Columbia." A perfectly honest and candid opinion! All the same, it is an opinion which I for my part am not able to indorse. Of the Vancouver Island apple I have no experience whatever. Consequently I leave it entirely out of the account. But with regard to the apples grown in the interior of British Columbia, at any rate in the district of Kootenay, in the south-east corner of that province, I have no hesitation in declaring that there are varieties grown there which, in point of flavour, are every whit the equals of the choicest English apples. The varieties I have in mind are Gravenstein, Wealthy, McIntosh Red, Golden Russet, Grimes' Golden, Ribston Pippin, and Northern Spy. These, as the English fruit-grower will observe, are all Canadian varieties except two—the Golden Russet and the Ribston Pippin. In both these cases I would honestly prefer the British Columbian product. On the other hand, the Blenheim Orange, as grown in British Columbia, seems to me to be, in point of flavour, unquestionably inferior to the English variety.

I have mentioned this little matter to exemplify the strict and careful impartiality which is displayed by Mr. Turner. It shows that he is a man who is conscientiously desirous not to mislead, that he is a man in whom the inquirer may repose full confidence—even as I did myself.

But the prudent inquirer will not rest content with making inquiries in London alone. He will extend his investigations to British Columbia itself. He will seek to acquire information in the actual district in which he contemplates settling. If, however, he prefers to leave the selection of his district open until he has an opportunity to see the country and investigate for himself, then he must, of course, spread the net of his inquiries wider, and seek his information in more than one district of the province.

For my own part, I was pretty well decided, even before I left England, that the district which would suit me best was the vicinity of Nelson, an important little town on the west arm of Lake Kootenay. One advantage accruing from this was that I was able to push my inquiries deeper, and to make them more circumstantial.

Nelson, then, was from the first the end and object of our journey.

Almost the first thing I did, after the idea of settling in British Columbia had taken root in my mind, was to subscribe to two or three of the local newspapers published in the Kootenays, and more especially in the vicinity of Nelson. These sheets are, of course, written, not for the use of readers in England or in any other distant land, but for the entertainment and information of the people dwelling on the spot. Hence the news they convey, the intelligence they impart, and the facts they give are, as a rule, devoid of prejudice: that is to say, they have not been penned for the purpose of throwing dust in the eyes of the stranger or glossing the truth to mislead the unwary. And even if they were so, it is generally possible, with a moderate exercise of the critical faculty, to read between the lines, and so to obtain some fair insight into actual conditions and actual circumstances.

Having read these newspapers for a period of eight or nine months, and having made personal inquiries by means of definite questions, concisely put—inquiries addressed to all sorts and conditions of men—I formed certain conclusions as to the actual state of affairs, as regards fruit-growing, in the Kootenays. These conclusions I will endeavour to summarise.

The industry, viewed as professional fruit-growing, was in its infancy, not more than two or three years old. At the same time, there were just a few orchards containing trees old enough to produce crops which showed what the capabilities of

the district were. The fruit which was produced took high rank—exceptionally high rank—not only by virtue of its size, its shape, its colour, its quality, but also by virtue of the consistency and the abundance of its yield. This was demonstrated by the way in which it held its own on the show boards both in America and at the Royal Horticultural Society's exhibitions of Colonial fruit at Westminster and other places in the British Isles. And it was also testified to by the opinions of men whose judgment was not lightly to be set aside—namely, professors of horticulture at U.S. universities and colleges, professors from agricultural and fruit-experimental farms in Eastern Canada—and opinions vouched for by visitors who were more or less practical fruit-growers, if not experts in their several lines of orchard work.

KICKING HORSE RIVER, ROCKY MOUNTAINS.

For instance, Professor Shutt, Chemist at the Central Experimental Farm at Ottawa, lecturing on the "Sources of Fertility in Fruit and Vegetable Culture other than Soil," said—and the Professor invariably spoke with professorial carefulness and with almost minute exactness in all his deliverances—that "there was a great future for vegetable and fruit culture in the Kootenays, especially for several species of apples, pears, plums, and cherries. The success of the district here as a fruit-growing one had fairly passed the experimental stage and had been proven." An equally favourable opinion was expressed about the same time by Professor E. R. Lake, of the Oregon Agricultural Experiment Station, a man whose opinion carries considerable weight in the horticultural world.

Testimony of a similar character could be quoted from the lips of several similar more or less competent observers. But let it suffice for me to say I was quite satisfied that the Kootenays was a district well suited, if not, indeed, exceptionally favoured, for the growing of fruit. Moreover, just about this time Earl Grey, Governor-General of Canada, gave convincing proof of the impression which the fruit-growing capabilities of the district had made upon him by purchasing, after personal inspection, 54 acres of fruit land on the shore of the main Kootenay Lake. This was not without its effect upon my view. The vaunts as to the fitness of the Kootenays for growing fruit could not be altogether without foundation after that.

The next questions were—How far the climate could be relied upon? How did it affect the prospects of the crop year by year? What was the effect of late spring frosts? How far cold east or north winds proved injurious? What was the extent of damage done by high winds to the laden trees? Were birds troublesome?

I was told that those varieties of trees which usually bear a crop every year could be safely relied upon for a full crop annually, and that those varieties, such as Blenheim Orange, which in England yield a crop every second year only, would in British Columbia yield, on an average, a full crop one year and half a crop the second year, and so on.

Spring frosts do occur; but they do not in any way seriously affect the fruit trees. "During all the time I have grown fruit beside Lake Kootenay," wrote one of my correspondents, "I can truthfully say I have never lost a cent from this cause." This appears to be perfectly correct. The explanation probably is that, owing to the geographical situation, the trees are somewhat late in blossoming, and do not reach the stage of development at which they become especially susceptible to injury from spring frosts until a time when the frosts are ceasing. Another contributory factor may, no doubt, be discerned in the proximity of the lake, the vapour from which, rising as the air warms in a morning, spreads itself like a protecting veil over the vegetation, including the orchards, which cling to the foot and slopes of the mountains. The early morning sun, again, owing to the narrowness of the lake and the altitude of the encircling mountains, does not shoot his beams directly upon the cultivated lower slopes, but strikes first the summits of the mountains, and then slowly creeps down from the top to the bottom, warming the air before him as he descends, so that when he does at last reach the orchards

below, the frost has already been thawed out of them.

Nor, probably, is the diurnal range of the temperature without its effect in providing a certain measure of protection against the "scalding or blighting" influences of the early morning rays. For, though the day may be bright and sunny, and even actually hot, as early as April, or, indeed, earlier, the nights are always, without exception, cool. This wide difference between day and night temperatures, sometimes reaching as high a figure as 40 deg. Fahr., obtains throughout the whole of the year, so that the nights, even after the hottest days of July and August, are refreshingly cool and agreeable. At this season, again, the hottest part of the summer, the lake acts as a sort of regulator, in that the heavy evaporation filters upwards through the orchards, moistening the foliage of the trees and cooling the bark, the blossom, or the fruit, and imparting a certain measure of humidity to the surface of the earth.

As for the winds, one of the most noticeable things that strike the new-comer in the Kootenays is the comparative absence of wind, the prevalent stillness of the atmosphere. This is especially observable, as a rule, at the time when fruit-blossoms are setting, and this is a fact the importance of which must not be overlooked. If fruit-blossoms set well, in still, tranquil, sunny weather, a good crop is pretty certain to follow. The comparative absence of wind will, in a similar manner, account for the smallness of the loss from the dropping of immature or nearly ripe fruit. The comparative immunity from loss in this way must, however, also be attributed to the entire absence of the codlin moth and other insectal and fungoid pests in the Kootenay orchards.

The geographical configuration of the country, the mountains screening the orchards from the quarters whence blow the chilling and injurious winds, accounts perfectly for the safety which the Kootenay fruit-grower enjoys against that dreaded enemy of his English confrère, the East wind and its near ally, the North wind.

COX'S ORANGE PIPPIN, TWO YEARS OLD.

According to the information given me beforehand, the winter in the Kootenays, especially along the immediate shores of the lake, was relatively mild as compared not only with that of the Dominion as a whole, but also with that of the rest of the province of British Columbia. During the ten years or more that meteorological observations of any scientific accuracy had been kept at Nelson, the lowest point ever touched by the thermometer in the winter was -6° Fahr. One or two cold snaps might be expected every winter; but, as a general rule, they were of short duration, and the thermometer seldom dropped below zero. At all events, the frost was never severe enough to do real injury to the fruit trees. Scientifically speaking, the thorough rest from all the various phases of reproductive activity enforced upon the tree by the comparative severity of the winter is of great value to it, and, no doubt, counterbalances the remarkably rapid manifestation of that same activity during the summer months. However that may be, it is indisputable that during the period from the blossoming to the maturing of the fruit the trees exhibit a wonderful display of vigour and an exceptional

activity. The young twigs, representing the season's growth, not uncommonly run to a length of three, four, five, or even six feet. And this goes on very often simultaneously with the production of such a heavy crop of fruit as to necessitate the propping of the trees. It is nothing unusual to see the larger portion of the mature trees in a British Columbia orchard surrounded with props—six, twelve, a score, or more; and even quite young trees, five or six years old, will, if allowed to carry all the fruit they bring forth, call for the application of a "forest" of friendly supports. Consequently, were it not for the compulsory rest of the winter, the trees would pretty soon exhaust their natural energies.

A SUCCESSFUL ORCHARD AMONGST THE STONES, NEAR NELSON.

Although the winter in the Kootenays, mild when viewed with Canadian eyes, severe when regarded in the light of English experience, thus provides compensation, as it were, to the exhaustive output of the trees' summer activities, it befriends them in yet another way.

Winter lasts, I was told, as a rule, from the middle of December to the middle or end of March, and during all that time the ground is under snow. This protects the roots against the frost. Then, again, the snow, melting on the mountains through the spring and on into the early summer, sets up a subsoil irrigation, which goes on practically all through the hot weeks of the mid-summer season. In this way aqueous nutrition is supplied to the trees by a natural, and, indeed, automatic, process of filtration, and they receive the moisture, not at any one time in excess, but all the time in well-proportioned measure pretty much as they need it. And this process of natural root-watering is greatly facilitated by the situation of the orchards at the foot of the mountains and the more or less gentle angle at which they slope down to the lake. This purely mechanical and gradual distribution of the "seepage" water co-operates with the heavy evaporation and consequent foliage-watering of summer to explain the fact that irrigation is less needed in this part of British Columbia than in most other regions of the province except the coast.

But the fact is also, and principally, accounted for by the relatively heavier rainfall in the Kootenays. The total annual rainfall averages 28 inches. This figure includes the snowfall. The amount, when distributed by "seepage" in the manner I have described, through the summer months, is sufficient to enable the rancher to dispense with irrigation. All the same, if the fruit-grower is able to command a supply of water, and is able to distribute it to his crops during July and August —and he generally is able to do both—he will find it greatly to his advantage.

The prevalent soil throughout the Kootenays is a light sandy loam, generally of a reddish colour, with a clay subsoil. In places the surface consists of gritty sand of a light grey colour. Fruit trees grow equally well in both soils. The atmosphere of British Columbia is impregnated with a peculiar quality of dryness; in fact, it might almost be described as parching. Owing to this, and to its own inherent lightness, the soil is apt to dry quickly on the surface. But this evaporation can be in great part, if not entirely, overcome by inducing the formation of humus and by continuous and uninterrupted cultivation. The formation of humus is effected in one way by the working into the land of good manure. It must be farmyard manure, which will contribute vegetable matter as well as animal matter. Artificial or chemical manure will not serve the purpose. Another effectual means to secure the formation of humus is to sow clover, vetches, cow-peas, or some other leguminous crop and plough it under. Both these methods enable the surface soil to retain a larger proportion of moisture, and to that extent diminish the need for continuous and uninterrupted cultivation, which is the third expedient resorted to in orchard work to preserve the trees against the drying influences of the atmosphere. Continuous and uninterrupted cultivation preserves a fine tilth, and converts the topmost layer of the soil into a dust

mulch, which tends to prevent excessive evaporation of the moisture stored underneath.

One word of warning is necessary. The English settler, accustomed to the trim and orderly aspect of an English ploughed field, with its unbroken and level expanse of brown soil and its neat hedges or straight lines of fences, must not look to find the same things in a new country such as British Columbia. I do not mean to say that nowhere will he find the counterpart of what he has left at home. Tracts of land, evincing the same advanced cultivation, are not, indeed, difficult to find; but by far the greater portion of the orchards presents, as yet, a much more unfinished appearance. It is not many years since the whole of British Columbia was covered with forest trees and scrub. The orchards have had to be carved out of the virgin forests. In many cases the work of eradicating all traces of the forest has been thoroughly and effectually performed; in many other cases it has been accomplished in a more or less incomplete fashion. The stumps of the big trees, cut off at the height of two or three feet from the ground, and blackened by the fires which burnt away the scrub and bush, attest impatience or want of thoroughness on the part of the first original settler.

Another eyesore to the English immigrant is the stones which in some places have been left littering the surface of the ground. These are of all sizes, from the bigness of a teacup to that of a boulder as bulky as a barn. It is, however, the most effective way, and in the long run the most economical, to eradicate every root and remove every stone that can be removed, at the time of clearing, before any attempt is made to cultivate the land or plant an orchard. Many of the early settlers did not act in that spirit, and the consequence is that, in some of the older orchards, the fruit-trees are to be seen growing—and growing splendidly notwithstanding—among the blackened stumps or amid the boulders which the destructive agents of Nature—denudation, aerial disintegration, and gravitation—have strewn over the lower slopes of the mountain.

The subjoined description is typical of the accounts which are circulated with regard to the district I am writing about, the Kootenays. It was penned by one of the pioneer fruit-growers of the Nelson country, an enthusiastic and public-spirited man, possessed of considerable experience as a grower of fruit:—

"I consider the conditions here (Kootenay Lake District) the most perfect for fruit-culture. I have been interested in fruit-growing in various parts of Canada and of the United States during the last twenty years, and until coming to Nelson, in 1901, I had found the climate of the Alleghany Mountains of West Virginia the most suitable for the production of small fruit. The shores of Lakes Erie and Ontario to Montreal I considered the best for the production of apples. The shores of Lake Ontario, from Niagara to Toronto, I believe to be the finest peach section in America. Within the past two years, however, we have shown that we can produce as fine apples here [Nelson] as in any part of Ontario or in the Northern States. Peaches are grown here to perfection, and I feel quite confident in asserting that the quality of the small fruit produced, such as raspberries, gooseberries, and black currants, is superior to any produced elsewhere on the continent; in fact, the Southern States, such as Virginia, Tennessee, and Georgia, will not compare with this section in the production of these fruits. The quality and size here are far superior, and the yield per acre is at least double that of anything I have ever seen or succeeded in producing during my ten years' residence in these States. One average gooseberry bush in my Nelson garden bears finer fruit, and as much of it, as six of my finest bushes did in West Virginia—and my Virginian garden excelled in the production of gooseberries in that country.

"I find that I can grow vegetables, such as sweet corn and tomatoes, just as well as I could in Virginia. We can grow potatoes to perfection, and the Champion of England and Ne Plus Ultra peas reach a height of eight feet in my garden.

"I have not found irrigation necessary, and this adds much to the superior quality of all our fruit.

"The fruit-grower will find here an ideal home. The climate is perfect; the soil is very rich and productive, and the market the best. He will be surrounded by beautiful scenery; and the shooting and fishing are the best to be found anywhere."

It was statements such as this—and if we tone down one or two of its superlatives, it will pass for a genuine and credible statement—coupled with facts published in Government handbooks, and information as to prices, markets, and the commercial aspects of fruit-growing in British Columbia gathered from private correspondents actually engaged in the business—that made me decide to pitch my tent beneath the apple-trees of this highly-favoured region.

CHAPTER IV.

Prices of Fruit and Cost of Land.

In the "Handbook of British Columbia," an official Government bulletin, distributed from the office of the Agent-General for British Columbia, Salisbury House, Finsbury Circus, London, E.C., we read (pp. 39-42): "The actual experience of many fruit-growers is highly satisfactory to them and a temptation to every man who desires to make money pleasantly to set up in the business. In Okanagan there are instances of $500 (£100) to $600 (£120) gross profit per acre. At Kelowna nine tons of pears and 10 tons of prunes per acre are not uncommon. Near Nelson 14 acres produced 1,000 cases of strawberries and 94 tons of roots, netting the owner $100 (£20) per acre. This land was formerly a cedar swamp. At Lytton to-day grapes averaging 4lb. to the bunch were grown in the open. On the Coldstream Ranch, near Vernon, 20 acres produced $10,000 (£2,000) worth of Northern Spy apples. At Peachland one acre and a half gave a return of $700 (£140) in peaches. Tomatoes to the value of $1,500 (£300) per acre were grown near Okanagan Lake. A cherry-tree at Penticton produced 800lbs. of fruit. These cases are by no means exceptional or confined to any single district. Similar ones could be cited from almost any part of the province. Apples and pears produce from 8 to 15 tons of fruit per acre, according to variety, and the average price is $26 (£5 2s.) and $30 (£6) per ton respectively. Plums, prunes, cherries, and peaches invariably bear largely, and the prices are always satisfactory if the fruit is properly picked and packed."

A SINGLE STRAWBERRY PLANT, KOOTENAY DISTRICT.

In another official publication of the British Columbia Government, namely, "Agriculture in British Columbia," Official Bulletin, No. 10, we read (pp. 22-25): "Mr. T. W. Stirling, Bankhead Ranch, Kelowna, says: This orchard of about 16 acres will produce about 160 to 170 tons this present year (1906). In 1903 it produced 140 tons; in 1904 it produced 130 tons; in 1905 it produced 160 to 170 tons; and probably it has not yet reached maximum production. Apples (variety Jonathan), planted in 1900, produced this year 100lbs. a tree—fruit worth $1.50 (6s.) per 40lb. box, f.o.b. packing-house—last year these trees yielded, as four-year-olds, 60lbs. a tree. Next year's crop may be estimated at 200lbs. per tree. One and one-third acres of Bartlett—*i.e.*, Williams—pears produced 16 tons of fruit, or about 800 boxes (selling price $1.35 (5s. 6d.) per box f.o.b. packing-house—$1,080=£216). One and one-third acres of Beurré d'Anjou pears produced 17 tons, or 850 boxes (selling price, $1.40 (5s. 8d.) per box f.o.b. packing-house—$1,090=£218). Two and one-third acres of Italian prunes produced 32 tons, or 3,200 crates (selling price, 60 cents (2s. 6d.) per crate—$1,920=£384). One acre of plums produced 12 tons, or 1,200 crates (selling price, 70 cents (3s.) per crate—$840=£168). Over $5,000 (£1,000) from six and one-third acres!" In "Southern British Columbia, the Garden of Canada," issued by the Canadian Pacific Railway, it is said (pp. 8-9): "Mr. J. M. Durr has four acres of bottom land on St. Joseph's Creek, south of Cranbrook [in the Crows' Nest Pass]. He has 3½ acres under cultivation. Off nine-tenths of an acre he raised 12 tons of first-class potatoes. An acre and a half of cabbages yielded the enormous quantity of 15 tons, which sold for 8 cents (4d.) per pound. He also raised 5 tons of carrots from a quarter acre. Mr. Durr's profits for the season, after retaining all the vegetables required for his own use, was $800 (£160), equal to over $200 (£40) per acre."

A privately-issued pamphlet, in speaking of the Kootenay Valley fruit lands, says: "One peach-tree produced 23 crates of marketable fruit, which sold for $40.25 (£8 1s.), and one strawberry patch, containing an acre and five-eighths, produced 498 crates of first-class berries, which at $2.25 (9s.) per crate, means about $690 (£138). The above are, of

course, not average prices; but the prices obtained last year for strawberries netted the fruit farmer about $200 (£40) per acre. An apple orchard of about 3,000 trees, four years old, netted $4 (16s.) per tree, with 76 trees to the acre. Cherries sold from $20 (£4) to $25 (£5) per tree."

My next extract is from an ably-conducted Nelson newspaper, "The Daily News." In describing the valley of the Kettle River, which lies west of the Kootenays, it says: "Italian prunes grown on the Covert estate by J. D. Honsberger, who purchased a portion of the estate two years ago, were shipped by him to Winnipeg at prices which yielded him a net return of $275 (£65) per acre. . . . Last year the older apple orchard on the same estate yielded a net return of $300 (£60) per acre, some of the trees giving over 20 cases of fruit each."

Mr. E. A. Ackland, of the Toronto "Globe," reported, when writing about the Nelson district: "As to prices, the [straw] berries averaged $1.80 (7s. 4d.) per crate net, and a case is reported where 5 acres of strawberries last year [1905] netted $1,000 (£200) clear to the producer. Apples brought about $1.50 (6s.) per box, averaging $8 (£1 7s. 6d) to $25 (£5) per tree." Usually from 50 to 80 trees are planted to the acre.

Mr. Maxwell Smith, Dominion Fruit Inspector, speaking of British Columbia, has stated publicly that the "fruit lands of the province pay from $50 (£10) to $1,200 (£240) per acre, according to cultivation; $150 (£30) an acre is a common net return."

Mr. W. J. Brandrith, Secretary-Treasurer of the British Columbian Fruit Growers' Association, reporting to the Bureau of Provincial Information for the season of 1905, said: . . . "Average prices throughout the provinces were as follows: No. 1 apples, from October 1st, 1905, to March 31st, 1906, were $1.27 (5s. 1d.) per 40lb. box f.o.b. shipping point. The early varieties started out at $1 (4s. net), and during the latter part of February and March as high as $2 (8s.) per box was being paid for strictly No. 1 in carload lots. The average prices of other fruits for the season of 1905 were: Pears $1.38 (4s. 6½d.) per 40lb. box; prunes and plums, 75 cents (3s.) per 20lb. box; peaches, $1.15 (4s. 7½d.) per 20lb. box; strawberries, $2.30 (9s. 3d.) per 24-basket crate; raspberries, $2.19 (8s. 9½d.) per 24-basket crate; blackberries, $2.40 (9s. 8d.) per 24-basket crate; gooseberries, 5½ cents (2¾d.) per lb.; crabapples, 2½ cents (1¼d.) per lb.; tomatoes, 5½ cents (2¾d.) per lb.; currants, 7 cents (3½d.) per lb.; and cherries, 9 cents (4½d.) per lb."

All these, it must be remembered, were wholesale prices, the prices realised by the grower, not the prices paid by the consumer. They range probably somewhat higher than prices of the corresponding fruit in England. Add to this the heavier yield, the greater certainty of a crop, and the lower cost of the land, and the scale of advantage dips without hesitation in favour of British Columbia.

I had before me another table of returns which was not without its effect in the way of influencing my decision. The accompanying statement does not tell us whether part of the produce mentioned was reared under glass; but the inference (e.g., tomato plants) is that it was. And I may state that after I reached British Columbia I visited Messrs. Gellatly's holding personally, and found there two large glass houses, probably each 150 feet long by 25 feet or more wide.

"As an example of what can be done on a 10-acre farm in British Columbia, the following statement of early fruit and vegetables shipped from Gellatly [beside Okanagan Lake], B.C., by D. E. Gellatly and Sons is submitted:—

Shipments (*i.e.* Sales).

	By Express. lbs.	By Freight. lbs.	Total. lbs.
Beets	120	—	120
Beans, green	1,028	—	1,028
Corn, green	998	—	998
Cabbage	815	3,711	4,526
Carrots	985	3,075	4,060
Cucumbers	3,295	—	3,295
Citron (melon)	—	4,090	4,090
Egg plants	151	—	151

Melon	2,436	—	2,436
Onions	200	1,030	1,230
Parsnips	—	1,450	1,450
Pumpkins	—	275	275
Potatoes	1,780	11,065	12,845
Peppers	170	—	170
Rhubarb	760	1,000	1,760
Raspberries	—	700	700
Strawberries	3,775	6,726	10,500
Turnips	1,060	155	1,215
Tomatoes	44,035	25,228	69,262
	61,608	58,504	120,112

Total 60 tons 112 lbs.

PLANTS.

Tomatoes	85,000
Cabbage	10,000
Strawberry	80,000
Raspberry	3,000
	178,000

"All this was raised on a 10-acre clearing in heavy bush in Okanagan Lake District the fourth year after Mr. Gellatly located the land" ("Agriculture in British Columbia," Official Bulletin No. 10, p. 16).

I now turn to the consideration of the costs of laying-out an orchard—that is to say, the price of land, the expenses of clearing, fencing, planting, and so forth. And I take, first, a little pamphlet which was sent to me in England from Nelson, entitled "Glorious Kootenay": "The price of fruit land varies according to location, situation, and the amount of clearing to be done, and suitable land can be secured throughout the various parts of the district at prices ranging from $30 (£6) to $100 (£20) per acre. As a general rule, it is better to commence by clearing sufficient land to put in strawberries and small fruits, so as to secure an early revenue, and then gradually to clear and improve the remainder for orchard purposes. Clearing can, however, be done by a contract or by day labour. It may be broadly stated that, with a capital of $2,000 (£400) to $2,500 (£500), 20 acres of good land can be cleared and planted with fruit-trees and strawberries and other small fruits, and that this amount of land is sufficient for an ordinary family, and should afford a good and sufficient income to live well upon" (pp. 18-19).

Now, it is evident, on a little reflection, that, while these statements may be true, they are incomplete as a summary of the situation. If the land alone cost $100 per acre (and this, I may add, is the average price that would have to be paid now), the price of the 20 acres would absorb the whole of the settler's capital. If, however, we put the cost price of the land at $50, the settler, after paying for his land, would have $1,000 to $1,500 left. Assume that the clearing costs him $40 (or better say $50) per acre, he has just about sufficient capital left to plant his land with. Twenty acres planted with 50 trees (if apples) per acre, at 30 feet apart every way, would cost for the trees alone (1,000 of them), one-year-old trees, $150 to $250. Add to this the expense of planting, fencing, the support of a family during two years; for, even though the man succeeds in clearing 2 acres the first year and getting them planted with small fruits in the fall and with strawberries in the succeeding spring, he still has to wait two years before he will be able to get any returns. The amount of capital stated would obviously be inadequate. It should be put at least 50 per cent. higher, and probably that would not be enough. Indeed, in the British Columbia Government publication, "Agriculture in British Columbia" (p. 22), the initial cost of planting 20 acres with apple-trees is put at $2,489.40; and the total cost before the trees begin to yield a revenue

at $4,838.22, or $242 per acre, the ground produce and small-fruit returns being assumed to cover the settler's living expenses. This more than justifies the moderation of my criticism.

Now, it is very probable that the writer of the paragraph quoted was proceeding on the assumption that the land would be paid for in four instalments, one of these being cash down, and the other three a bond upon the ranch at 6, or may be 7, per cent. Let us see how the case stands then. The settler, buying at $50 per acre, pays in cash $250. He clears 2 acres in each of the first two years at a cost of $40 per acre ($160), supporting himself meanwhile on his own capital. At the end of two years he has paid two further instalments of $250 each, plus interest ($575), and has spent $1,000 on his own living and $800 on fences, trees, implements, a house, and so forth. Consequently, he has spent altogether $2,785. And even if we assume that the settler does all the clearing with his own hands—a task almost impossible—he would still have spent nearly $300 more than his capital. Assuming, however, that he by some means keeps his expenditure below that limit and does not exceed. He will then be in the position of having exhausted his capital, with one instalment, plus interest, to be paid at the end of his third year. On the other hand, he will have 2 acres capable of giving him a return and 2 acres more ready to plant; but by this he has no capital left with which to buy trees. We have seen in the last chapter that Mr. Durr, near Cranbrook, after providing himself with vegetables, but vegetables only, for his family, sold off 3½ acres produce to the extent of $800. Our settler has only 2 acres capable of giving him a revenue; consequently, he will earn only $457. Now, even though he does raise his own vegetables, his living, with taxes, seed (potatoes, clover), plants, and trees, will more than absorb the amount he earns.

In this discussion everything has been put in the most favourable way for the settler. Nothing is allowed for contingent expenses, such as making water arrangements, travelling, hired help for cultivation, clothing, or for total or partial failure of small fruit bushes to bear the second year. Altogether, it is pretty manifest that the capital sum mentioned is not sufficient, and that it ought to be increased by at least 50 per cent. Then, it is to be remembered that this discussion is upon the foundation of the figures as to cost and prices supplied to me through the pamphlet mentioned, as well as other sources upon which I was drawing for information at the time. If I were to rediscuss the matter in the light of the actual prices which obtain to-day a 50 per cent. increase in the amount of capital stated to be necessary would not be enough. The land alone would cost, not $50, but $100 per acre. But with this I shall deal again towards the end of the book.

Let us now look at another estimate of cost, framed by a firm of land-agents interested in selling fruit-lands.

10 acres at $100 per acre	$1,000.00
Clearing	150.00
Ploughing	50.00
Trees	100.00
Planting	25.00
Cultivating for 3 years	300.00
	$1,625.00

This tabular statement ignores fencing, cost of house and implements, and the settler's living expenses, and it puts the cost of clearing 100 per cent. too low. As a result, the amount of capital quoted ought to be at least doubled.

However, the printed statement from which I have quoted the tabular formula above goes on to say: "Should the purchaser do his own work and cultivate between the trees, and raise vegetables, etc., during the first years, he may not only obviate the cost of cultivating, pruning, etc., but may count on an annual income from the first year from his vegetable crops. The usual price of potatoes is 60 cents (2s. 6d.) per bushel in car-load lots, and at retail lots 90 cents per bushel is a low price. Tomatoes sell on the market at from 3 cents (1½d.) to 20 cents (10d.) per lb, depending entirely on how early in the season they are placed on the market. In the second year strawberries come in, peach-trees produce fruit in the third year, and apple-trees in the fourth. In addition . . . eggs sell at 40 cents (1s. 8d.) per dozen, and during the winter 75 cents (3s.) is a low price."

POTATO CROP ON NEWLY-BROKEN GROUND, ARROW LAKE.

The setting out and care of an orchard, until it becomes a source of profit, does require a considerable outlay of money and considerable personal exertion. The clearing is by no means an easy task. It is often an arduous undertaking, costing from a few dollars up to $100 and even $125 per acre. In the mountainous south-eastern corner of British Columbia, where the Kootenays (East and West) are situated, the slopes are often fairly steep, and the surface is littered with large boulders, which render ploughing and other operations of the cultivator a matter of some difficulty. But, provided the slope is not too steep to retain the soil, fruit-trees may be confidently counted on to grow and produce the finest of fruit in ample abundance.

It is pretty evident, therefore, that the amount of capital required for a 20-acre orchard, even if the settler buys land which is as yet in a state of nature, is something like $3,500-$4,000, or at the rate of nearly $200 per acre.

CHAPTER V.

Spying Out the Land.

I spent a week inspecting fruit ranches on the shores of the west arm of Kootenay Lake, near Nelson, at prices ranging from $100 to $135 per acre, the ranches being all what are called "improved"—that is, each had a certain proportion of its acreage cleared and planted with trees of various ages, and a further proportion in different stages of clearing. Then I looked at a few unimproved fruit-lands, the prices, of course, ruling lower. It was one of these, situated near Bonnington Falls, in the Kootenay River, eleven miles below Nelson, that appealed to me most strongly. The soil was first-rate and of great depth. A large portion of the land was cleared in as far as big trees were concerned, and on the remainder the big timber-trees were all sold and the purchaser was busily engaged cutting them down and getting them out. The aspect, a gentle slope towards the south, well sheltered all round, was in every way excellent. Five to ten acres were ready for breaking and ploughing at once, and if this were done without delay a crop of some sort could be reaped the first year. The place was close to a railway station, through which three trains passed each way, to and from Nelson, every day—three times the usual number. There were two houses on the property ready to step into; also a large new stable and a big poultry-house. Then, to crown all, the price was reasonable. Nor does this exhaust the attractions of the place; and I use the word "attractions" advisedly, because the higher ground commanded one of the most striking and beautiful river scenes in British Columbia, and that is equivalent to ranking it among the loveliest pieces of landscape to be found in the world. As we stood at the edge of the bench-land, we had at our feet the two falls of the Kootenay River, with the flashing reaches that link the lower falls with a series of rapids which thread a group of rocky, tree-grown islets lower down.

The principal drawback to the place was that certain parts of the frontage next the Canadian Pacific Railway were very rocky and the ascent to the bench above was rather steep. This last objection could be overcome by making a road up the soft earthern face of the bench. As for the rock outcrops, they were seen at their worst from the railway. When you got up above, on to the land, they were only prominent in two places. The total amount of waste from this cause was probably about 6 per cent. of the whole, and there were scarcely any big boulders. Almost the entire area of the ranch would admit of being planted with fruit-trees. Of the total extent, there was less than 5 per cent. that could not be planted. The area amounted to over 300 acres.

Although I found here very many of the conditions I was looking for, I postponed making a decision until I had visited the Okanagan district, farther west. It was the Okanagan district which had done most to make British Columbia so widely and famously known as a producer of excellent fruit, and I wanted to see what the country was like. As it chanced, the opportunity presented itself to visit the valley in the company of the President and Secretary of the British Columbia Fruit Growers' Association. I seized it, and was thus enabled not only to see the Okanagan country under the best auspices, but also to gain access to localities which might possibly have been denied to a simple stranger unprovided with special credentials. Moreover, the two officials mentioned were to give a series of demonstrations in tree-planting, pruning, and spraying, and to advocate the formation of a Central Provincial Exchange as an agency for co-operative buying and selling—chiefly for selling.

The first locality at which we stopped was Kelowna, a bright little town, with an air of English neatness and prosperity, the well-built houses standing back in large gardens, and the streets being wide, while behind the town was a large expanse of farm land, intersected by fenced roads. We were driven on to a large fruit farm of some three hundred acres. But the trees were quite young, and had by no means reached the bearing stage. All the fruit land in that district was dependent upon irrigation; and somehow, although I was posted up in the advantages of irrigation as regards both the certainty of an annual crop and the heaviness of the yield, I had a prejudice in favour of unirrigated land. Nor did I see anything either at Kelowna, or at Summerland or Vernon, both of which places we visited during the course of the trip, to warrant me in disregarding the promptings of that prejudice. Besides, it was not altogether instinct that deterred me from buying in the Okanagan. The prices there ruled very much higher than they did in the Kootenays. This was only to be expected, as the country was older and the art of fruit-growing in every way more developed than in the Kootenays. The prices I was asked ranged from $200 (£40) an acre upwards. But then, I must admit that this was for land which required no clearing: it was already cleared and quite ready for the plough and for planting. On the other hand, there was an annual rent for water, a rent that would last in perpetuity. And what a heavy burden a tax of that nature may become upon agriculture I knew from painful experience in the region of my youth—the Fens of Lincolnshire.

AN OKANAGAN PEACH ORCHARD.

Summerland, some ninety miles farther south, on the west side of the Okanagan Lake, was in many respects an ideal place. There was not a single drinking saloon or store which could supply strong drink throughout the whole of the community. Such a thing as locking the house door was, I was assured, absolutely unknown. The ranchers had a most convincing air of prosperity, and were very hospitable. We were shown three or four of the ranches belonging to the most successful of these men, whose fruit had won medals at the Royal Horticultural Society's Colonial Exhibitions in London two years in succession. But the dust! April though it was, the roads were more than ankle-deep in soft, floury, silty dust, which rose in choking clouds in the wake of our chariot wheels.

At Vernon we witnessed a proof of the severity of even a British Columbia winter. The preceding winter had been one of unexampled rigour throughout the west of Canada, and in the Okanagan the thermometer had dropped to -28° Fahr. The consequence was that at Vernon some of the peach trees, in at least one small orchard, were killed down to the ground level. This again did not appeal to me, any more than did the dust of Summerland, especially as at Summerland itself, despite its name, we had seen other peach trees which had almost certainly been killed back to within a few inches of the ground by frost.

It was, as I have already said, my object to erect greenhouses and grow hothouse produce, including flowers. For this object none of these Okanagan towns appeared to me sufficiently favourable. In the first place, water is a *sine quâ non* of greenhouse work—water in unlimited quantities. It would not do to be restricted to the quantity that would be appropriated strictly to my acreage. In the next place, these towns were smaller than Nelson, and consequently were not likely to purchase so large a quantity of flowering plants and cut flowers. Thirdly, places on the Okanagan Lake had communication with the main line of the C.P.R. at Sicamous Junction on three days of the week only—the boat returning south on the other three days of the week. Now, however, there is a daily service.

For these various reasons, I would not settle in the Okanagan Valley; I would return to Nelson and the Kootenays. I did so, and after very little further delay I bought the Bonnington Falls ranch. I have been asked why I did not try to see more of British Columbia before making my selection. The answer is simple. From the inquiries which I had made at a distance before coming out I was pretty certain that there was a good opening at Nelson for the special line of business which I proposed to embark in. When I reached Nelson I found that my impression was correct. In other words, I knew precisely what I wanted, and, having found the thing that appeared to me to fulfil the essential requirements of the case, I did not see what object was to be gained by further search, especially as by making further search I should have lost that season, and with it practically a twelvemonth's work.

FRAME HOUSE, BONNINGTON FALLS RANCH.

BUILDINGS, BONNINGTON FALLS RANCH.

CHAPTER VI.

Our Herd.

Having bought ourselves a good kitchen stove and various kitchen utensils in Nelson, and several pieces of second-hand furniture from the people living in the house at the Bonnington ranch, we went out to take possession of our new property. I had already bought from the former owner of the ranch the whole of his herd of cattle, numbering in all seven head—namely, three cows, a calf, a young bull, a young steer, and a young heifer. These animals were, of course, kept under cover during the winter, so long as the snow lay on the ground. But it was now the middle of April, the snow had already disappeared, and the animals were being allowed to range at will all over the ranch—that is, through the woods and along the hillsides. There was a certain amount of clover and grass, which they knew how to find; but they lived to a considerable extent upon the young foliage of the trees and shrubs. And though we were at times able to detect the flavour of their food in the milk, it was never so disagreeable that we were unable to drink it. The rest of the herd used to accompany the cows when they came home of an evening to be milked. We kept them in the stable all night, feeding them with hay, and, after milking the cows in the morning, turned them adrift for the day.

After the exceptionally severe winter in the North-West hay grew to be extravagantly dear in the spring of 1907, the price running up to $30 (£6), and even $35 (£7), per ton; whereas the average price at ordinary times is $20 (£4) to $25 (£5). In addition to this price I had to pay cartage and freight on it coming out of Nelson by rail. There was, it is true, a driving road to within about one mile of the house; but, unfortunately, it ended on the other side of the river, immediately opposite to the Upper Falls, and there was no bridge across. Then the road was a rough mountain road, and it is questionable whether we should have been able to cart hay in any quantity over it, especially as the distance would be fully eleven miles. At first, however, we did not even think of this alternative: we did not possess either horse or waggon.

In spite of the excessive cost of the hay, we soon began to find out that our herd was a source of profit. On a large neighbouring ranch were several young men, who catered for themselves. They were eager customers for butter, milk, and eggs.

Both the Upper and the Lower Falls in the river had been harnessed and made subservient to the needs of man. At each fall the West Kootenay Power and Light Company had constructed an electric plant, for the purpose of supplying electric power to the mines and smelters at Rossland, Trail, Phoenix, Greenwood, and other towns along the American-Canadian frontier line, twenty to fifty miles distant. To say that the company had constructed its plant at both falls is not quite accurate. The works at the Lower Falls were, indeed, completed; but they had been discarded in favour of a more up-to-date and more powerful equipment at the Upper Falls, and this latter was not yet fully completed. Seventy men were still at work putting the finishing touches to the constructional works, although the plant was running and supplying power.

These men, too, came to buy eggs and milk, and some of them, who were married, and lived in shacks (rough wooden huts) or tents, wanted butter also. Our butter we sold for 40 cents (1s. 8d.) per lb., our milk for 10 cents per quart, and our eggs for 40 cents (1s. 8d.) to 70 cents (2s. 11d.) per dozen. Maggie, my wife, soon began to wax rich.

In the meantime I had been joined by two men from England—one, a married man, an experienced gardener; the other, a single man, was to look after the live stock and cultivate the land.

I am sorry to say I cannot commend cows as valuable assistants on a fruit ranch—that is to say, on a ranch where the fences are incomplete. Our first experience of the sort of assistance cows render was in connection with young cabbage plants. Almost the first thing we did after settling on our new possessions was to sow some cabbage seed, so that we might have early cabbages for market. Now, there was not far from the house a little pocket of useful garden ground, well hidden, and at a distance from the cow-tracks, so that we never dreamed of our young cabbages and cauliflowers, our lettuce and radishes, being in any jeopardy. Nor were they, all through the early stages. But our security was false. Whilst the seeds were growing up into young plants, we were straining every nerve to get a piece of ground dug and cleared ready to receive them. After strenuous efforts (for it is anything but an easy task to dig the virgin forest ground, with its tangle of interlacing roots) we were just congratulating ourselves what a nice piece of well-dug, well-cleaned land we had prepared for our cabbages, and, all being well, to-morrow we should transplant them. But destiny—that is to say, our noble herd of cattle—decreed otherwise. Even while the smile of self-satisfaction was beaming upon our perspiring countenances, the cows, followed, not led, by the lord of the herd, had found out our young plants, and were

revelling in the luxury.

It was very exasperating to lose them in this way, precisely when they were ready for being transplanted, and when we, moreover, were equally ready to transplant them. However, a small residue of both cabbages and cauliflowers was saved. These growths we transplanted, and from them we cut the cabbage and cauliflower heads which won each a first prize at the Nelson Fruit Fair in the September following.

Of course, we lost no time in fencing round the little pocket of garden ground; but, in spite of our efforts, the cows broke in three or four times subsequently. They were animals which had been bred and born in the forest. Fallen logs were no insuperable obstacles to them. They could all jump like greyhounds, especially the calf, to which our children Olive and Leslie gave the name of Nellie. This animal, rearing herself on her hind legs, would pop her fore feet over the log, then lift her hind feet—if not gracefully, at all events cleverly—and over she would go. And all the rest of the herd were equally clever at threading their way through the under-growth of the forest and over the fallen trees, which in places encumbered it.

One Sunday morning, when I was lying down resting, after the strenuous toil of the week, engrossed in a light book, I was aroused by hearing Leslie cry "Father! Father!"

"Yes; what is it?" I answered.

"The cows are at the gunpowder!"

I hurried out, fearing the beasts would cause a concussion with their hoofs and blow themselves into mincemeat, for it was dynamite, or rather powerful blasting powder, with a large proportion of dynamite in it, into which the cows were poking their inquisitive noses.

The boxes containing the dynamite had been placed in a hole dug out of the face of the slope leading up to the bench-land, and it was there, sure enough, that the animals of "Our herd" were holding conclave. I hurried off at once up the hill.

Nothing happened. The animals were evidently digesting dynamite with the greatest gusto. Nor, so far as we were able to detect, did any of the cows suffer any ill effects from this banquet of peril. All the same, dynamite was far too expensive a luxury to regale the pampered appetites of cows upon. I afterwards had it properly protected with beams and planking.

UPPER AND LOWER BONNINGTON FALLS.

I was told later that cattle have a penchant for gunpowder and dynamite, being attracted by the salts they contain. Shortly afterwards I learned that the summer preceding a near neighbour had lost two of his young heifers in some mysterious way, and that both, when opened after death, were distinctly black inside, evidently from devouring gunpowder. Then, a little later, we read in the local paper that a rancher about fifty miles away had had no fewer than fifteen young cattle killed through eating dynamite, and that another man had lost seven from the same cause. The salts in the compound were evidently the temptation.

CHAPTER VII.

Undeserved Worries.

No sooner were we shaken down in our new quarters than I began to inquire about a team of horses. I was told there was a team to sell at a logging camp just outside the boundary of the ranch, and was taken to look at them. They were by no means first-class animals; but they were accustomed to the hills, and they had been trained to haul logs—both very useful qualities for clearing, the work I wanted principally to engage them upon. The price was not high. But I made no real attempt to buy them. In consequence of a hint which I received, I called at the Government Property Register Office, in Nelson, and there learned, in answer to my inquiries, that there was a mortgage upon the team; for, in British Columbia, all mortgages, whether upon land or upon chattels, have to be registered to be effective in law.

Shortly after this I learned that a firm of horse importers in Nelson had a team to sell. My informant, who knew more about horses than I did, told me that he had himself seen them, that they were satisfactory animals, and that the price was so-and-so.

I went into Nelson to look at them. On reaching the town I learned, to my dismay, that, owing to a scarcity of coal, caused by a strike at the mines, the C.P.R. had determined to accept no more heavy goods for transportation. Consequently, unless they would agree to put the horses (assuming I bought them) on the last freight train, which was to leave Nelson at that midnight, I should be unable to get them out to Bonnington. However, I went to look at the horses, and bought them, provided they could be got to Bonnington by next day. At first the C.P.R. refused to accept them. Then the seller proposed to take them by road as far as Upper Bonnington Falls, and thence ferry them across the river. I was just dipping my pen into the ink for the purpose of writing out the cheque to pay for them.

I paused. "Well, in that case," said I, "I will give you your cheque when the horses get across the river." The place where they would be ferried across was only two hundred yards above the falls, and the current ran both swift and strong. In fact, within a year afterwards three men who were crossing by that same ferry were swept away in the boat, hurled over the falls, and drowned.

"Wait a moment!" cried the seller, and he turned to his telephone, and rang the bell vigorously. After an animated conversation, he announced that the C.P.R. would take the horses out on their last train, at midnight, provided they were put in the car before six o'clock that evening.

Next day we looked out anxiously at Bonnington for the freight train from Nelson. The freight train came about the middle of the morning. It pulled up at our station. It put off some heavy stores for the cook-house or bunk-house (sleeping rooms) of the men of the West Kootenay Power and Light Company, and then went on. But where was the car with our two horses? None was left. What had become of them? Some one at length suggested that, perhaps, they had been left at the Upper Falls.

Off we went to the Upper Falls Station. Before we reached it, we caught sight of a freight car standing on the spur or siding. We found its floor to be four feet above the ground, and there was nothing in the nature of a platform. How on earth were we to get our horses out? By this time, however, we had had some experience in grappling with little difficulties of this kind. Borrowing several stout two-inch planks from the Power Plant people, we constructed a sloping platform, and down it we led our horses one by one.

We had got our horses. But for some time they proved to be of very little real use to us. I shall never forget the first attempt we made to plough with them. It was not ploughing, as ordinarily understood. It was breaking the ground for the first time since its creation. Centuries upon centuries had gone to the making of it. We aimed at confounding the slow labour of Time in the course of a few fleeting minutes. Although the soil was light in texture, the work was terribly severe. Every few yards we had to stop to clear the ploughshare from the mat of interlacing roots which clogged it. Calaby took the plough-handles, while I endeavoured to lead one of the horses by the bridle. From the very first the mare resented my being at her head. We knew that both had been doing nothing for some considerable time; but we persevered, believing they would quiet down and become more tractable when they had worked off their friskiness. Instead of improving, they became worse. I put myself between the two of them, and took hold of both bridles, and tried in that way to lead them both. The second mare was ten times worse than the first one. Not only did she fling her head about wildly: she struck out with her fore foot and attempted again and again to get my hand into her mouth. Then she

stopped, and refused to pull, and it was not long before the first mare followed suit. We tried all ways, gentle and other; but pull they would not. At last, after the two of them, jerking at the same moment, had nearly wrenched my arms out of their sockets, we were obliged to desist. Lawrie, the gardener, who was a witness of our proceedings, said afterwards that he fully expected to see me struck down and injured, if not worse. For weeks after my arms suffered from the strain. I ought to add that I had never worked with horses before in my life.

FIRST DIGGING OF NEW GROUND, BONNINGTON FALLS RANCH.

Upon my going to consult with a native Canadian, settled on the next ranch, he told me that Canadian horses are not accustomed to be led, and will hardly ever work when they are led; they are always, for all purposes, driven by long reins. Acting upon this information in future, we never experienced anything like the same difficulty with them. Indeed, in process of time, they became so docile, and worked so well, that Calaby, while driving them into Nelson, was repeatedly asked if he would take for them a sum equivalent to £10 more than I paid for them.

We did not attempt to plough with them again for several weeks. One reason was that for nearly a month they luxuriated in lameness—first one, then the other. No sooner was the foot of the grey mare recovered than the foot of the brown went wrong; and did we bandage and rub and poultice the brown mare's foot into soundness, we found the grey limping. It was insinuated to me that it was all caused by mismanagement; but I refused to credit that. And no better proof of the falsity of the insinuation could be found than in the subsequent history of the team. They turned out as useful and handsome a pair of horses as a man need wish to see. They never suffered from any trouble, either to their feet or to their chests, and to-day they are both as sound of wind and limb as horses should be. I have no doubt it was their unfamiliarity with the ground that caused their lameness. They had been bred on the prairie, and they had not yet learnt how to avoid the sharp stones of the British Columbian hillsides or the still sharper "stubs"—jagged ends—of the slashed scrub.

There was a further cause why, for a time, we did not get out of them all the work that we had a right to expect. Both were mares, and both turned out to be in foal. I had been warned of the possibility of this in the case of one of them, though I did not suspect it in the case of the other.

When their troubles arising out of this condition were well over, we had them engaged in "stumping," one of the processes of clearing, and after that we again put them to the plough, one man driving with the long reins, while Calaby guided the plough. This time everything went without a hitch.

Early one Sunday morning, towards the middle of the summer, I was awakened by repeated lowings of cattle outside the house, and, judging from the noise and commotion, there appeared to be a considerable number of them. I jumped from bed, and looked out of the window. At the sight which met my gaze I was ready to tear out my hair by the handful. The yard was full of cattle—strange animals, for, as I have said, "our herd" numbered only seven, and yet here were more than a score! It was not that, however, which excited my wrath. The bull and three other animals were rampaging inside the fencing which ought to have protected another choice piece of garden ground, in which were growing, not only two large beds of extra fine lettuce, but also a very choice collection of dahlias and sweet peas, and other florists' flowers, intended partly to stock my greenhouses as soon as I could get them constructed.

Dragging on a few clothes, out I dashed, and, snatching up the biggest stick I could see, I gave hot chase to the animals. But, as the Germans love to put it, in throwing away the bath water I flung out the infant also. Once I had the strange cattle on the move, off they went of their own accord; but they took with them my own herd! Fortunately, after going a short distance, my cows, desiring to be milked, turned back and made their way of themselves to the stable. The other creatures I chased more than a quarter of a mile up the hill, and then, seeing they were travelling steadily through the woods, I returned home, to continue at four a.m. my night's interrupted repose.

But this was a Sunday, and for some reason the Fates had decreed my Sundays should be marked by unsought adventure and excitement. About an hour before noon Maggie put her head into the room in which I was sitting, to tell me that the yard was again full of "cows."

"Where are Calaby and Leslie and the rest?" I cried. I had had enough of the early delights of cow-punching for one day.

"I don't know," said Maggie; "I think they have gone down to the power house. I don't see them anywhere about."

Accordingly, in spite of myself, I had to have all the fun alone. And fun it was! Fun that drove me distracted. I managed to meet the marauders before they got well within the precincts of the yard, and turned them back. So far, so good. But instead of proceeding, as they had done on the first occasion, seven or eight hours before, in a compact body straight back by the path by which they had come, they scattered over the hillside, and made for the cultivated land on the bench above, where, in one direction, we had peas, carrots, potatoes, turnips, savoys, brussels sprouts, and other vegetables growing, and in the opposite direction tomatoes, carrots, and clover. True, both "fields" were fenced round; but along the edge of the bench, where the beasts would first come into contact with it, the fence was, unfortunately, weakest, consisting in part of barbed wire; in part of slim horizontal poles nailed to slight upright posts. They did not attempt to break their way through our flimsy fences; but they did what was worse. They streamed up the roadway we had made up the face of the bench and forced an entrance through the "gate" at the top, and so began to spread out over both fields, to right and to left. By dint of running hard, I contrived to head off and turn back most of the band, and got them well started along the outside of the fence; but a few escaped me. Of these, some went at full gallop all over the tomatoes and clover, and you may imagine how enraptured I felt when I beheld two or three athletic young steers choosing out my lines of recently-planted apple trees for a cinder path, a young heifer "doing the mile" inside the fence, and zigzagging across the potato field, with her tail high in the air; while a "bunch" (to use a Canadian idiom), possessed of sedater manners and more inquiring minds, were endeavouring to sample my dynamite boxes.

I shouted, I waved my stick, I ran till I was breathless; but no matter how far I ran or how fast, I seemed to get not one bit "forrader." While I was chasing animal No. 1, the rest of the bunch were demonstrating the independence of their characters by pursuing each a separate path. My eye would light upon depredator No. 2 working irreparable havoc among the green peas (just ready for cooking, of course), and off I started after No. 2, leaving No. 1 in dangerous proximity to the young carrots. Then animal No. 3 wooed my attention, and I had to desert No. 2 to take up with the new beauty. They kept me at this game for over half an hour, and I had not beaten a single one of them, either literally or metaphorically. I was just giving up the thing in utter despair—hot, panting, exhausted—when, thank heaven! Leslie's head appeared above the edge of the bench, and soon after he was followed by one of the men. Stationing myself, therefore, at the parting of the ways, I suffered them to carry off the honours by chasing the evil-doers out of the fields.

These cattle belonged to a neighbour, who had them fenced, it is true, into his own domain; but they had broken bounds, scrambled down the side of a steep ravine, then climbed up the other side, and traversed over a mile of our woods. I could not help thinking that for the crime of being a "tenderfoot" I was receiving something more than the punishment that was strictly my due.

Our cows came back that night; so did the heifer and the calves, for by this we had two of them. But that prodigal son of a bull did not show himself either that evening or the next. I had to go over to my neighbour, and lodge a formal complaint against his cows of having eloped with the lord and master of my herd, and request his assistance in recovering the truant. This he readily promised, and he was as good as his word. In three or four days he let me know that he had the culprit safe in a stall in his cattle shed.

Calaby and I trudged over to bring the bull back home again. It was not the most inviting task—to lead a strong young bull, who had never known restraint, whose nose was not even pierced for a ring, a distance of a mile and a half through a country destitute of roads. Fortunately, my neighbour was an experienced man among cattle, having been at one period of his life a cow-puncher in Texas. With his help, we got a patent ring inserted into the animal's nose; and it was almost

incredible with what ease and absence of bustle Mr. —— pierced the nose and inserted the ring. Of course, the bull did not like the trinket, and grew restive under the pain it inflicted.

Having snapped a strong chain into the ring, and securely tied an equally strong cord to the same, we let the beast pass quietly out of the stall. By dint of pulling and humouring and driving we got him on to the railway track, along which we had to travel for nearly half a mile. We had chosen a time when, as a rule, there was no train to be expected. Still, the trains, especially the freight trains, run so irregularly on the Canadian lines that no reliance could be placed upon precedent—it was quite possible that we might either meet or be overtaken by a train before we covered that critical half-mile. The task before us was one that I had not the slightest relish for. Part of the way along the railway we should be in a deep rock cutting; part of the way on a high narrow embankment, with a sheer drop of twenty feet on both sides.

Well, as I have said, we got down on to the railway track without any serious difficulty; but no sooner did we get clear of the railway station than trouble began. If the cows' escapades in my potato and tomato fields were comparable with a ladylike game of hockey, the game we were now compelled to play was little different from the toughest scrimmage of an American football match.

The bull would race along for ten yards or so. Then he stood stock-still, and could not be hauled or beaten into movement. Then he would turn half round, and try to get back to where he had come from. Once he put his head between his knees and turned an almost complete summersault into the ditch at the side of the track. We both thought he had broken his neck, until Calaby managed to pull one of his legs from under him, and straightened him out a little. Thus the game went on, it costing us half an hour's solid hard work to get the bull safely over that dangerous half-mile. Calaby eventually found that the most effective way to induce the animal to go forward was to twist his tail. So, there he was, Calaby one hand hanging on to the chain, the other twisting the root of the prodigal's tail, while I held on to the rope, my aim being chiefly to prevent the bull from running back.

At length we came to the trail leading up to the lumber camp, where I had seen the team of horses. I cannot say how thankful I was to have escaped an encounter with a train.

The climb from the railway into the woods was an ascent into regions of greater difficulty. The trail was narrow, and in places not very well defined. Everywhere it was bordered by trees, scrub, and fallen logs. The bull would not go straight. Frequently he tried to tie himself and us into a knot round a tree or a bush. At length, however, we reached ground that was more familiar to him, and he put on dignity, as more suitable to a triumphant return to the domestic circle. The muscles of my arms were a long time in recovering tone and elasticity, and to this day Calaby has not forgotten that morning's work.

CHAPTER VIII.

Clearing and Planting.

It was the middle of April when we actually began ranching operations. My first aim was to get some fruit trees planted, so as to save a good twelvemonth towards the time of their maturing. In Canada the spring is the season when most fruit trees are planted. I am well aware it would have been more scientific to plough the land and sow it with clover before attempting to plant. But one does not always do, one is not always able to do, what one knows quite well ought to be done. It must be remembered that the ground I had to deal with was completely stripped of its big trees and bigger scrub. What remained was creeping vegetation, like the Oregon grape and the thimbleberry, a sort of bushy raspberry, with tough, ramifying roots. We measured out our orchard ground, arranging to plant the apple trees 30 feet apart every way, and all other fruit trees at intervals of 20 feet both from tree to tree and from row to row. Then, where each tree was to come, we dug the surface for a distance of six or eight feet square, and afterwards, when the fruit trees arrived, put one tree in the middle of each square of clean, well-dug land. Even then, by the time we had finished planting, it was very late, for our last tree was not put in until May 18. By that time summer had fully come; the days were hot, and the sun shone with considerable power. I expected to lose some of the young trees; but, even though only 50 per cent. survived, I should have had so many trees one year ahead. As a matter of fact, I lost no more than 12 per cent. of the whole. The loss was principally in one variety of apples and in the peaches.

While we were waiting for the fruit trees to arrive, we had dug over the little sheltered piece of garden ground in which we sowed the cabbage, cauliflower, lettuce, and radish seed; and there we planted 5,000 one-year-old asparagus plants which I had brought with me, as well as hardy ferns and violets, and sowed onion seed, French beans, and other vegetables. Then we tackled one portion of the bench-land above, a space of about 1½ acre, which was practically ready for the plough. Of this area we did not get much more than one-half turned over with the plough, owing to the trouble we had with our horses.

As soon as I understood that the horses were not to be counted upon for breaking the virgin soil, I sent to Nelson for a couple of extra spades. Every now and then, as we worked, we came across the half-drawn fangs of some former giant of the forest. Then down went our spades, and up went axe and mattock and crowbar, and we chopped and hacked and hauled and lifted and levered and strained until the last relics of the monster were upheaved. Then we either kindled a fire underneath him or drilled a hole below him and inserted half a stick or a quarter of a stick of dynamite and lit a fuse, retiring to watch the result.

In this way we slowly but surely subdued every inch of that acre and a half. Then we planted the ground with potatoes. By this time it was almost too late for that; but I had resolved to risk it. The risk was justified by the result. Off that 1½ acre we dug in September sixty hundredweight of sound potatoes, or "spuds," as the Canadian prefers to call them.

As soon as the potatoes were planted, we turned our energies to the preparation of half an acre or so to receive two thousand tomato plants. These plants, when they arrived, proved to be very different from what we should have had sent to us for planting in England, having been lifted directly from the seed-boxes. This gave them a severe check. Yet this was not the only trouble that fretted their brief existence. Just as they were recovering from the shift to the open ground, we noticed that they were being eaten by some insect or other enemy. We suspected slugs or caterpillars; but of neither were we able to discover the slightest trace. As a matter of fact, slugs cannot live in the dry atmosphere of British Columbia. We were puzzled. What could the enemy be? It was obviously something outside the range of our ordinary English experience. A day or two later the mystery was solved for us by the local newspaper, which spoke of the ravages of the "cutworm" among the cabbage "patches" of Nelson. The cutworm! That was our enemy beyond a doubt. Luckily I had a Government pamphlet in the house, describing the creature and its habits, and telling the ignorant how to feed him to render him innocuous. The diet recommended was bran and Paris green (arsenic). I lost no time in ministering to the taste of the cutworm and in humouring his palate to the top of his bent. We were troubled by him no more.

Fortunately, the depredations of this pernicious enemy are confined as a rule to three weeks or so in the twelvemonth; but while the voracity of the creature lasts the mischief it does is almost inconceivable. The cutworm itself is a short, thick creature like a caterpillar, dark brown, closely resembling the earth in which it lives. It is generally found about half an inch or so under the surface, and as a rule at the base of the stem or stalk of the plant upon which it is preying.

Notwithstanding these set-backs and disasters, our tomatoes thrived amazingly in the hot, bright sun of British Columbia, and they began to ripen early. Although they did not all attain full maturity of colour, I was able to sell between forty and fifty boxes at the price of $1 (4s.) per box. This was not, it is true, a very great or very profitable yield. But then the plants were small and backward to begin with, and they had experienced two severe checks. Besides, they had no fertilizer whatever, and no water was given them after the day they were planted. The result was sufficient to convince me that, given strong, early-transplanted plants and a favourable season, it would be possible to raise a paying crop of tomatoes on a sunny bench such as that which we had at Bonnington.

This conclusion was supported by the experience of our neighbours on the next ranch. The crop of tomatoes which they produced (from forwarder plants than ours) was one which excited the emphatic admiration of Lawrie, who confessed he had never seen a crop of tomatoes like it in all his life. But whereas we had staked up our tomatoes, our neighbours allowed theirs to spread out and ramble, in the orthodox Canadian way, all over the ground. The consequence was that when rain came many of them cracked, and the edges of the cracks turned black. In the Okanagan Valley outdoor tomatoes are one of the crops that the ranchers rely upon principally for their annual income.

When a newly-arrived settler buys fruit land in British Columbia, there is always a more or less large proportion of it covered with trees and forest growth. This has, of course, to be removed before the rancher can begin his proper work of growing fruit. The successive operations are logging, burning, stumping, and grubbing.

Logging is the operation of cutting down the big trees. The tools required for this are a couple of two-headed axes and a big, two-handled, cross-cut saw. A notch having been made in the side of the tree, about two or two and a half feet from the ground, the saw is got to work, and with two skilled men at the handles the tree will be sawn through in less than ten minutes. Indeed, a couple of men who understand their work will cut down (so one such man told me on one occasion) no fewer than seventy trees in a day. At this work the man who told me this and his mate were able to earn at the rate of $3 (12s. 6d.) each per day. It sometimes happens that a tree in falling lodges against another tree, and so fails to reach the ground. In that case the woodsmen attack a third tree standing close by, and saw it down in such a way that, when it crashes, it falls across the first tree, and the two then generally come to the ground together.

After the tree lies prone on the ground, it is stripped of its branches, and the trunk is sawn into definite lengths of ten, twelve, and so on up to twenty feet. The branches are left on the ground, for, the trees being mostly straight conifers, the branches are generally small. The logs are drawn off, and either sent to the saw-mill to be cut up into planks and building timber, or sawn up on the spot for cordwood (firewood) and fencing posts and rails. When all the big trees are felled, the bushes are slashed down with a sort of bill-hook, known as a bush-hook, and then the whole of the ground is swept by fire. By British Columbia law this burning of the scrub ought to be done in the month of April, but is prohibited, under heavy fines, in the succeeding hot, dry months—from fear of forest fires. The law is not everywhere rigidly enforced, and the consequence is that forest fires are frequent. There is nothing to prevent a rancher from burning his scrub during the winter months, provided he can get it to burn then.

After the burning, the proceeding is to eradicate, or grub out, the charred stumps of the big trees. In some parts of the country this is done with a stumping machine; but the machine is expensive, and not easy to move about in a mountainous country. I do not remember ever to have heard of one being used in the Kootenays. In default of using a stumping machine, the work has to be done by human agency, with the assistance of horses.

The first thing that is done is to bore a hole right under the middle of the stump with a big auger, or make one with an iron bar; then insert a charge of dynamite or blasting powder, attach the fuse, and blow up the stump. If the stump is not too big, and the charge of dynamite is of the right size, this result will follow. If the stump is a very big one, the result aimed at will be to split it up the middle and at the same time loosen the fangs. These are then drawn out one by one by horses, pulling on a heavy steel logging chain. Trying work it is, especially upon the harness and the single-trees or heel-trees. Our horses became quite expert at this work.

Now this work of stumping is by no means free from danger. The blasting material used is highly explosive, and a slight concussion will sometimes discharge it. Fortunately, it freezes at a higher temperature than water does. In consequence of this, it often has to be thawed out before it can be used. The safest way is to thaw it over a tin of warm water. But men do not always keep to the ways that are safe. For instance, I have been told of men who were thawing dynamite on a

kitchen stove, the sticks lying naked on the iron. One of the party, after drinking out of an enamelled tin cup, put it down on the stove. Instantly there was an explosion, the slight concussion having disturbed the equilibrium of the molecules of the powder. In the case I am alluding to the consequences were serious. One man was killed outright, and another dangerously hurt.

Almost immediately after we settled at Bonnington Falls I engaged three young men to stump and clear by contract the piece of ground on which we afterwards planted our tomatoes. They accomplished their task, and left us on the Monday morning. Next day, in the afternoon, when the steamer from Nelson to Kaslo put in at a landing-stage on the west arm of Kootenay Lake, she was asked to take on board a badly-wounded man. It was one of the three young fellows who had been at work on our ranch only two days before. It seems that he and his companions had drilled two holes, one on each side of a large stump, and that, having inserted the charges of powder, the injured man proceeded to light the one fuse, while his cousin simultaneously applied a match to the fuse on the opposite side of the stump. The first man's fuse burned without a hitch; his cousin's refused to catch. The first man thereupon leaned over the stump and endeavoured to light the refractory fuse with another match. While he was doing this his own charge exploded, and shattered his thigh, besides inflicting other serious injuries. After he had lingered in agony for something like twenty-four hours, death mercifully put an end to his sufferings. We all felt this tragic incident, for not only was the sufferer a fine young fellow, with a winning and attractive personality, but he was also well-known to people with whom we were acquainted in the Old Country.

A BIG STUMP SPLIT BY A DYNAMITE CHARGE.

A LOGGING SCENE.

His cousin, who had been on the other side of the stump at the time of the accident, suffered injury, especially to the eyes. At first it was feared that he would lose the sight of one, if not of both; but eventually he recovered, and was very little the worse except for the shock. The last operation in clearing away the virgin forest, preparatory to ploughing, is that known as grubbing, or getting out the roots of the scrub, bushes, and quite young trees. For this work the most effective tool is the mattock, which has an adze on the one face and a narrow axe on the other. Many of the roots can be got out with this tool alone. Where it fails to do the work completely, a team with a short logging chain will soon complete the business. A good pull at the fangs in one direction, followed by an equally good pull in the opposite direction, will generally loosen the stubbornest root, and once it is loosened the rest is easy.

CHAPTER IX.

Ranching Incidents.

Close to the house at Bonnington Falls was a stretch of something like half an acre of almost level ground. At first sight it did not appear to be promising as a field for cultivation, and I dare say we should never have attempted to make use of it in that way—at all events, not at that early stage of the proceedings—had it not been for some gooseberry bushes already growing on it. It was thickly strewn with stones, mostly small. But the former owner of the ranch, who indeed had squatted on the land (or, in Canadian language, "staked" it), had picked off the stones, leaving them in four rows, one on each side of the gooseberry bushes. Our breakfast used to be ready at half-past six; consequently there was half an hour, and sometimes an hour, to spare before that meal. This time was utilised by some of us in picking off the stones and building them up into a wall, intended to serve as a fence. As fast as the stones were cleared off we dug the ground, and eventually we planted part of it with a choice collection of dahlias, which I had brought out with me from England. This ground proved to be the best of all the pieces that we cultivated. At the fruit fair held at Nelson in September, we put up over one hundred varieties of dahlia blooms—cactus, decorative, pompon, and single—and with them won two first prizes and a second. The blooms, being all massed together, formed the most striking feature of the floral section of the show.

On the same soil we grew some remarkably fine gladioli, which again won us a first prize at Nelson. Altogether, at that same show, we won six first and three second prizes out of ten entries. Eloquent testimony to the natural fertility of the soil of Bonnington Ranch!

It was while the majority of us were absent in Nelson at the show that the only instance of lawlessness which came under our own immediate observation occurred. A stranger came in off the railway track, and presenting himself at Mrs. Lawrie's door begged for something to eat, and after he had been given what he asked for went on to demand money. Mrs. Lawrie gave him a modest coin. He was not satisfied, and demanded more. Calaby, the only man of our party left at home, was working up on the bench, nearly half a mile away, so that Mrs. Lawrie was quite helpless, and was obliged to give the man what he wanted. No doubt he knew that it was the fair day, and speculated upon the men of the ranch being absent in Nelson.

The main incidents of our ranch life at this time were such as arose out of the newness of the country and our want of experience. For instance, when our horses went lame, I was advised to remove their shoes and let them run shoeless, being told that it was the invariable practice to do so. This did not prevent them from going lame, however, and after a while we found that their hoofs were wearing down. I decided that the shoes should go on again. But then arose a difficulty. Who was to put them on? Where should we be able to find a blacksmith? I knew that blacksmiths were to be found in Nelson; but the question was: Would a blacksmith be willing to sacrifice half a day or more to a journey out to Bonnington and back in order to shoe two horses, and, even supposing he were willing to do so, what would the cost be? So far as I was able to calculate it, the cost would run up to thirty shillings or so. Then, we possessed neither anvil nor forge.

On inquiry we learned that a smith was expected to visit the logging-camp, which I have mentioned more than once, and it was equipped, we knew, with both a forge and an anvil. Yet it was altogether uncertain when the blacksmith would come. We sent to the logging-camp every day for a week; but no blacksmith appeared, and we were no nearer to getting our horses re-shod. But help came from an unexpected quarter. Our neighbours discovered that their horses also needed re-shoeing, and they were able to arrange with a blacksmith (who had been a farrier in a British cavalry regiment) from a neighbouring gold mine to come out on a Sunday and put shoes on all four horses. And by the kindness of the Superintendent of the West Kootenay Power Plant, we were granted permission to use their forge and anvil.

Yet another little escapade of our horses, which vied with the cattle in causing us worry, may be chronicled. One day, Maggie, the two children, and I went down to the station intending to take train to Nelson. After waiting some minutes, we saw the smoke of the engine, telling us that the train had left Slocan Junction, a mile and a half away. Ours was the next stopping-place, so that it would not be many minutes before the train arrived. Just at this moment we caught sight of the grey mare, plunging on the higher ground immediately above the station.

"Look!" cried Leslie. "She's got her foot fast in the wire netting!"

I realised that in her efforts to release herself the mare might pull off her shoe, if not her hoof. Yet if I went to her to set her free, I should to a certainty miss the train, which would be tantamount to postponing our journey until the following day, for the next train into Nelson did not arrive until too late in the evening to be of any real use, unless we were prepared to stay all night. However, there was nothing for it: I could not go off and leave the mare in difficulties. Off I started, therefore, to her relief. But just as I was crossing the line, Leslie called to me, "There's Calaby, father! Can't you hear him whistling?" Then, lifting up his shrill voice, he called, "Calaby! Calaby!" and proceeded to warn him what was amiss. As it happened, Calaby had seen the predicament the mare was in, and was already hastening to her rescue.

LESLIE AND THE CALF.

Although both Maggie and I had been familiar with the usual domestic animals when we were young, neither of us had had much to do with them personally. Hence, now that we possessed animals of our own, we were immensely taken up with them, and studied all their habits and doings with the liveliest interest. From one point of view all our animals were in her eyes of regal breed: they were incapable of doing wrong. They might eat our young cabbages and cauliflowers, crop (as they did three times in succession) our green peas, nibble our melon plants, and so on; their offences were not at all too heinous for pardon. But when they went the length of invading our water-works and upsetting the pipes, so that the flow of water into the house was stopped, they overstepped the bounds of pardon, particularly when the offence was on a washing day!

The children were, perhaps, more delighted with the animals than we were. The horses, the cows, the other cattle, but, above all, the calves, were never-ending objects of interest and wonderment. At first, so long as the two calves were too small to be allowed to range the woods with their mothers, they were kept at home. Still, the weather was warm, and I did not like the idea of their being shut up all day in the stable. We had as yet no home paddock or pasture to turn them into. The only enclosure was a large poultry run, fenced round with wire netting six feet high. In lieu of any better place, we used to turn them loose into this poultry run. It often fell to Leslie's lot to lead them out of the stable and put them into their day quarters. Many were the half-hours of frantic amusement this task afforded, not only to Leslie, and to Olive, who was sometimes ambitious enough to try to help her "little" brother, but to all the rest of us.

After we had been settled at Bonnington about four months the owner of one of the oldest orchards in the immediate vicinity of Nelson came and offered to sell me his property. By that time I was committed to Bonnington: the property there was paid for, and I had sunk an appreciable amount of additional capital towards developing the place. My preparations for erecting greenhouses were already well advanced. The glass was on the spot, the timber was ordered and (in the Canadian phrase) might be "shipped" any day. And I had no fault to find with my Bonnington purchase. I felt I should act unwisely to make any change. After taking some time to think over the offer—which was in some ways a tempting one—I made up my mind to decline it. But it was decreed that the matter should not rest there.

I was again brought into contact with the owner of the ranch. He renewed his offer. In the meantime the attractions which I had formerly seen in it had acquired added importance, and other reasons why it might be a desirable thing to make a move had begun to press in upon my mind. This time I did not hesitate very long, but resolved to close with the offer. In this way I became the owner of two fruit ranches before I had been six months in the country. There was a keen and growing demand for fruit land, and prices were steadily going up, so that I did not think I was running any very serious risk in saddling myself with this additional responsibility. For another thing, in the new ranch I should be much nearer Nelson, and on a waggon road only three miles distant. We should thus be able to sell and deliver our flowering plants and cut flowers and other greenhouse produce with our own vehicles independently of the railway. Moreover, the two

children would be able to continue their schooling, and yet remain at home under our own eyes and under our own care, a thing they could not do at Bonnington, owing to the lack at that time of a school of any kind in the neighbourhood.

As soon as I resolved to move, I set about disposing of my herd, or the greater part of it, for the new ranch was much smaller, and did not possess pasture more than enough to feed a team of horses and at the most two cows.

In answer to an advertisement which I put into the local paper, a dairyman came out one night to look at the bull with a view to buying him. It was a pitch-dark night, and pouring with rain, and we went to inspect the animal by the light of a lantern. The dairyman could not, I am sure, see very much of the beast; nevertheless, he made me a bid for him, which I did not choose to accept.

The young heifer and the biggest of the calves, Nellie, the steeplechaser, I sold to a precise, conscientious old man, who came and talked half a day about them before he finally made up his mind to buy. At last he set off along the railway track at the tail of the young heifer. I say "at the tail of the young heifer" because, although we tied a long rope to her horns, and put the other end in his hands, with the idea that he should lead the animal to his own home, seven or eight miles away down the railway, the heifer started at such a pace that she literally dragged the poor old man nearly off his feet in his efforts to keep up with her. Nellie ran along after the two of them, and behind Nellie was Calaby, who followed for about a mile, and then had to stop from want of breath. When he got back home he reported that he had left the old man and the heifer and the calf "still running." I myself met the old gentleman again some months afterwards, and learned that he had made "a very expeditious journey home." But he expressed his unfeigned astonishment at the way the calf was able to "leap and bound," and he inquired if I could tell him the best way to prevent the heifer from "making so free with her hind legs when he went to milk her."

Now, in addition to horses and cattle, I had also laid the foundation of a herd of swine by buying a Berkshire sow. The animal arrived by rail in a wooden crate, which was put out at our station and left on the platform. Had we been wise, we should have had the horses draw the pig on a sleigh all the way to her new quarters in our sty. But somehow our instincts did not lean towards wisdom—at all events, not on this occasion. There were one, two, three, four, five of us, and she was but one small pig. Where, then, could be any difficulty or trouble? We anticipated none. In fact, even before the animal arrived Leslie bargained that he might be allowed to bring her up single-handed. He had led the second horse from the Upper Falls siding to the stable successfully, and a pig is nothing like so big as a horse.

Before knocking away the side of the wooden crate, Calaby twisted a stout cord round her snout. Then a few blows of a hammer, and the animal was free. The distance we had to take her was about two hundred yards. But all the time we spent traversing those yards (and it was really unconscionable) it was as if Pandemonium had broken loose. All the inhabitants in the vicinity came out to witness the spectacle. On the verandah of our house were Maggie and Olive and Mrs. Lawrie, all in fits of laughter. The wife of the superintendent of the West Kootenay Power Plant, who lived immediately opposite, was doubled up with amusement. Calaby hung on to the cord like grim death while he practised his method of enforcing progress by twisting the pig's tail. I clung like a limpet to one ear, and tugged and hauled with all my might. Leslie, expert in the dragging of calves, put all his strength on to the rope which Calaby was holding, while a fourth man pushed behind.

Shortly before I bought the second ranch I learned that a neighbour was willing to sell some eight acres of clover. As the price he asked for it was quite reasonable, and I had found the cost of hay excessively high, I agreed, after some hesitation, to buy. The hay would prove extremely useful. My hesitation arose out of the question, How shall we get it home? In the first place, I had no waggon. In the next place, even if I had possessed a waggon, it would have been impossible to use it until after we had constructed a road a mile and a half through the woods. But the seller and another neighbour, a born Canadian, removed my hesitation by assuring me that we should experience no difficulty in "hauling" the hay home on a sleigh after the snow fell in winter. When it came to the point, we discovered yet another way, and contrived to get it brought home in the summer. We packed it on our horses' backs. To each side of a pack-saddle we securely tied a long bundle of hay, and then hoisted a third bundle on the top of the two, and so led the horses one behind the other by the trail through the forest. As they came lurching along the road which we had made down from the bench, there was very little more of the horses to be seen than their legs and switching tails.

On one occasion during the course of this work we very nearly had a serious accident. In the course of the journey we had to cross a home-made bridge spanning a deep gully. The bridge was made by flinging two long poles across the ravine, and then laying shorter poles closely side by side at right angles across the first two. On the occasion I am alluding to the leading mare broke one of these transverse poles and put her foot through. She went on as if nothing were

amiss. I myself was leading the second mare, and between us, in our efforts to avoid the hole, the mare made a second hole, and her leg dropped through, her load at the same time pulling her over towards the side of the bridge, where there was nothing but a thin handrail to guard against a tumble into the ravine. Had she gone over, it would have been an extremely difficult matter to get her out again, because just at that spot the sides of the ravine were of solid rock, and not only did they go sheer down to a depth of twenty feet, but the water of the torrent had eaten its way into the rock at the bottom, so that there was, as it were, a cave at each side. Luckily, the mare recovered her footing before the hay dragged her over.

CHAPTER X.

Beasts, Birds, and Fish.

One day, walking along the path which our cows usually followed through the woods, on climbing up from a watercourse I caught sight of two pretty animals playing in and out underneath a fallen log. They were about as big as hares, but white, with a broad black band running all round them from the sharp-pointed snout to the tail. They did not manifest any alarm at my approach. What could they be? I began to move nearer, when all at once the answer flashed across my mind. Black and white! I turned and ran—literally ran—back ten or a dozen yards, and then proceeded onwards again on a wide detour, being very careful not to disturb the little innocents at their play. They were skunks!

"FISHING IN THE POOL BELOW BONNINGTON FALLS, KOOTENAY RIVER."

On reaching home I did not fail to report. The recital put Maggie into high agitation. She trembled for the lives of her last two broods of chickens, than which there are no daintier morsels in the black-and-white rascals' diet. We helped her to take every precaution for their safety, putting the coops on boarded floors, which projected with an ample margin all round, and every night the little fluffy creatures were elaborately barricaded into their quarters. In spite of all, the bloodthirsty enemies discovered their whereabouts. Very late one night we were startled out of our sleep by hearing the sharp report of a shotgun quite close to the house. Naturally we were alarmed, until some one called out, "Oh! it's only Calaby."

But we each put to ourselves the question, "What's he shooting at?"

The question was very quickly answered, and that without the breathing of a word or the flicker of an eyelid.

Sniff! sniff! The house began to be invaded by the most pestilential odour it would be possible for the most depraved imagination to conceive. It grew stronger and stronger; it penetrated to every part of the house; it was impossible to get away from it; and it persisted.

When we rose in the morning, Calaby proudly exhibited a dead skunk.

Next evening, when the time came for fastening up the hens and chicks, one of them could not be found. Eventually we discovered her ensconced behind the stove in the outer kitchen, the door of which had evidently been left open. She was, of course, driven away to her coop. Next night the same hen was missing, and it was only after a prolonged search that we found her safe in the henhouse. Clearly the smell of the skunk was abhorrent to her!

A few nights later Maggie and I were just winding up the labours of the day when Maggie literally took my breath away by the vehemence with which she flung open the house-door and dashed out, crying, "There's something at my chickens! It's skunks! It's skunks!"

Before I was able to join her with a lighted candle she was waging warfare upon the dreaded enemy, beating at them with her apron. I expected every instant to see her covered with the nauseous fluid that the skunk ejects when angered. There were two of the creatures, and although I saw one slipping away into the darkness as I stepped out of doors, the other clung to one of the coops, and despite Maggie's excited cries and her frantic attempts to scare it away, refused to

budge. It had contrived somehow to insert a foot underneath the bottom edge of the coop, and with its sharp claws had dragged one poor hapless chick away from the shelter of its mother's wing. As I approached, the beast at last relinquished its prey and slunk off after its mate. I suppose it fled before my lighted candle.

Skunks were not the only enemy that Maggie feared for her chicks. Daily she went in trepidation for their lives, for hawks abounded in the vicinity, and almost every day, and often several times in the day, we heard their harsh challenges. It was not until Calaby had scourged them severely, and cut down a half-charred, decapitated tree which they were fond of using as an outlook tower, that we were free from their persistent menacings.

Later, after we had removed to the second ranch, we had experience of the boldness of these hawks. One evening, when we were all sitting on the verandah laughing and talking, something on wings flew past us, not more than ten feet distant, and on a level with our eyes. It was a hawk with a big young chicken in its talons. I leapt to my feet and gave chase, and was fortunate enough to come up with the feathered highwayman just as he was preparing to tear his prey to pieces. A lucky fling with a stone over a clump of intervening bushes so startled him that he took flight, leaving the chicken behind him. I picked up the fluttering creature, and though its skin was badly torn under its leg, it recovered, and lived to grow up into a profitable pullet.

Up on the bench-land at Bonnington there was yet a third animal which, we were given to understand, had a *penchant* for tiny chickens. This was the gopher, a species of marmot, a creature whose external appearance combines the familiar features of the rabbit and the rat. Fortunately, the gophers remained up on the bench-land, and never came down as far as our poultry yard. In fact, as we broke up the ground on the bench, and destroyed their burrows, they gradually disappeared.

After the gophers disappeared, we were visited by another somewhat similar animal, which also lived in a burrow in the ground. This was the chipmunk, or ground squirrel. A pretty little creature, the nimblest animal I ever saw. To see the chipmunks running along the tops of the fences, stopping suddenly, tilting backwards on their haunches, and patting their mouth with their forepaws, first one side and then the other, with almost incredible quickness, was indescribably funny. We all thought them charming little animals, until we discovered they had a certain habit. This was to run all over the plum and pear trees and nibble tiny chunks first out of one fruit, then out of another. Had they stuck to one and the same fruit, their very daintiness and their playful ways would have earned them forgiveness. But to flit from fruit to fruit, and from tree to tree, sipping the honey of plum and pear, spoiling, not consuming—that was more than the selfish heart of a fruit-grower could tolerate or forgive.

Bird life was very abundant all the summer at Bonnington. Most of the species were birds of passage. One of the prettiest was the Blue Bird, about the size of a robin. Indeed, it is sometimes called the Blue Robin. Its note is very sweet and liquid, and has been happily described as the "violet of sound." The bird is a favourite all over the American continent. Lowell, the poet, sings of

> "The blue bird, shifting his light load of song
> From post to post along the cheerless fence."

On another occasion I saw a single specimen of a remarkably handsome species. Despite a merely fugitive glance, I was able to see that the bird wore a most gay and brilliant apparel, the predominating tints being orange, scarlet, and glossy black. I suppose this was the American Oriole, better known as the Baltimore Bird.

Woodpeckers, too, were plentiful in the woods; and in the winter the landscape, generally so still and serene, is wont to be enlivened by the flittings to and fro of flocks of snow-buntings, and by the plaintive "cheep, cheep," of the solitary "chickadee," both being about the same size as the ordinary English sparrow, which they resemble in plumage. Another conspicuous visitant, especially in the fall (autumn), though it is by no means plentiful in point of numbers, is the blue jay. In the popular imagination this is a sacred bird, and we were informed that the killing of it is forbidden by law. We failed to see any reason for killing it; it does no damage, so far as our observation goes. Its worst offence appears to be that it sometimes pilfers from the elderberry bushes when the berries are ripe.

AN ORCHARD SCENE, WEST ARM OF KOOTENAY LAKE:
Nelson in the distance.

Tiny humming birds, with bright vermilion throats, hover on tireless wings above the blossoms of apple, pear, plum, and cherry during May, and later sip honey from the nectar cups of gladioli, sweet peas, and other fragrant flowers.

The principal game bird, though we did not find its numbers at all inconvenient, is called the grouse. This is by no means a shy or timid bird. It clings to cover until you almost tread on it, and even when it does "flush," it will settle again a very few feet away. On one occasion I "put up" the same bird three times within the space of twenty-five yards and less than two minutes of time.

Slocan Junction, which is within a mile and a half of Bonnington Falls, boasts of one of the most famous fishing pools in the interior of British Columbia. The Canadian Pacific Railway have recently built there a "fishing chalet" for the accommodation of sportsmen, and although passenger trains do not run in that direction on a Sunday, provision is made to convey devotees of the rod out and back on the usual Sunday freight train.

Lawrie, our gardener, is an enthusiastic fisherman, and he is as skilful with the reel as he is enthusiastic, having fished in the Tweed when a boy. Every evening, as soon as his day's work was done, barely giving himself time to swallow a bite of food, off he went to prey upon the unwary trout in the deep, swift, tumultuous Kootenay river, which danced past his house not fifty yards distant. And there he would remain until darkness of the summer night made it impossible for him to see. He hardly ever came home empty-handed.

Now, Lawrie's prowess excited Leslie's slumbering ambition. He, too, wanted to be a fisherman, and "catch mother a trout for supper." He tried his 'prentice hand with a makeshift rod, and caught a few small fish occasionally. His mother, sceptical as to his ability, declared she would give him a dollar for the first big fish he brought home with him. A new rod was bought for him, and down he went in Lawrie's wake. Ere many minutes we heard him afar off, returning in a state of uncontrollable excitement and triumph, carrying a big rainbow trout. It turned the scale at close upon 3 lbs.

But Leslie's success as a fisherman was not unique: his mother's matched it. *Her* triumph was won in the wider, deeper waters of Kootenay Lake. One evening a friend, Mrs. S——, called and begged Maggie to accompany her and Mr. S —— for a row on the lake. As it happened, Mrs. S—— had a line out, with a minnow at the end, trailing behind the boat. Maggie related Leslie's adventure, and concluded her narrative with a remark on how much she herself would like to catch a fish. Mrs. S—— put the line into her visitor's fingers. Her visitor's fingers closed upon it, and her visitor went on talking. Suddenly she forgot the thread of her discourse, and cried excitedly, "Oh! there's something on the hook!" and before she could recover her presence of mind, Mrs. S—— was helping her to draw a monster to the surface. It, too, was a trout, how big it beseemeth me not to say.

Here I may remark that the lakes and rivers of the Kootenays are well stocked with various kinds of trout, as well as with char. The king of the Kootenay fish is the rainbow trout, a game fellow, who grows to a weight of sixteen pounds, if not more, and furnishes many an hour's keen delight.

Wild duck and teal swarm on the Kootenay Lake at certain seasons, and throng the marshy ground at the southern end.

Deer are fairly common in the mountains. In fact, they prove themselves at times a nuisance to the rancher, for they leap

his fences, even though as much as eight feet in height, and nibble the sprouting foliage of his fruit trees early in spring.

CHAPTER XI.

Our New Ranch.

The new ranch is three miles east of Nelson, on the south shore of the west arm of Kootenay Lake. It occupies a flat, blunted tongue of land that slopes gently from the mountain foot and projects into the lake. In other words, the lake sweeps round it in a semi-circle. Lake Kootenay is throughout a beautiful sheet of water, and this place, to which we have given the name of Welland Ranch, is one of the most beautiful anywhere on the lake. A clump of tall cottonwood and other trees bathe their feet in the cold, crystal waters on one side of us, while the ground between the margin of the lake and the mountain behind the house is covered with our orchard, or rather orchards, because we are cut in two by the railway from Nelson, which skirts the southern shore of the west arm all the way to its exit from the main lake at Procter. Opposite our ranch the west arm is about a mile wide, so that we are able to command a fair view of the fruit ranches on the opposite shore. They, too, are backed by mountains, rising 2,000 to 3,000 feet above the level of the lake, which itself lies 1,760 feet above sea-level. The mountains on both sides have rounded outlines, but are scarred and weather-worn, although the surface is softened by the trailing garlands of dark pines which grow in the hollows and along the watercourses. It is a never-ending pleasure to watch the transformations of light and colour on these mountain sides—the mottling shadows of the scurrying clouds, the clinging scarves and veils of fleecy mist, the purple glow of evening, the splashes of vivid sunset flying over the snow-capped mountain crests, the gloom of the coming snowstorm, the vivid sharpness of the frost, the limpid purity of early summer dawn. Of all her various moods, I think I admire the lake most when she lays all her caprices and coquetries aside and just rests. At such times—and the loveliest hour is at daybreak on a midsummer morning or towards the close of a warm, bright day in autumn—every feature of the rocky mountains around, every tree, almost every twig, is etched on the glassy surface with such keen and minute sharpness that it is not always easy to tell at the first glance where the lake ends and the dry land begins.

The house is large and rambling. The original building has been added to at various times, and there are evidences of the internal arrangements having been materially modified. For some time it was used as a lake-side summer hotel, to which the people of Nelson resorted, especially on Sundays, for snug little dinners. Notwithstanding the close proximity of the mountains, the outlook from the windows is always cheerful. We stand sufficiently high above the lake to see everything that passes to and fro on its waters. All summer it is alive with pleasure boats and launches, and even in winter three steamboats ply up and down the lake every day. Now and then we have opportunity to watch a big boom of cut logs floating on their way to the saw-mills at Nelson. Barges, laden with mineral ores or cordwood, sawn timber or general stores, pass frequently, pushed, not pulled, by fussy little tugs with stern-wheel paddles. Occasionally we catch a glimpse of a canoe, our admiration excited by the swift, short strokes of the Indians and their rapid swing of the paddles from side to side, generally after every two, three, or four strokes. And when there are two or three Indians in one canoe, it is wonderful how cleverly they keep time with their leader, both in paddling and in changing over.

In the spring and early in summer the lake is often thickly strewn with floating lumber, branches, tree-trunks, and all sorts of *disjecta membra* of the woods and watercourses. These are washed down by the freshets which flow out of the rapidly-melting snows, and are eagerly sought after for firewood by people dwelling on the lake side. Men even go out in boats "log-hunting." In the course of a few days a man is sometimes able to tow to land sufficient wood to serve him for firing for the whole year. For some time there lay on our foreshore a forest giant running to 150 feet in length and nearly three feet in thickness at the butt. It took a man nearly a fortnight to saw it up and split it into quarters.

A broad garden path, shaded by half a score of rose arches, runs down from the front of the house to the edge of the lake, a distance of little more than 100 yards. The path is flanked by broad flower borders, behind which stand on the one side a triple row of cherry trees, and on the other a double row of Italian prunes. The walk ends at an exceptionally lofty cottonwood tree, the topmost branches of which have been broken off in some storm. It only wants that melancholy sombre fowl, the raven, to come and perch on the topmost broken branch to complete the sense of weirdness and some unholy curse which the sight of it suggests, especially when a tempest howls about its gaunt and stiffened limbs.

Behind the cherry trees are the greenhouses, standing in a broad excavation, hewn, or rather blasted, out of the sloping surface. The only level ground on the whole of the ranch was too near the edge of the lake for us to use it as a site for the greenhouses. The stoke-hole of the furnace would have had to be put down below the water level, and when the lake rises, as it does, ten, and sometimes fifteen, feet at high water in July, the furnace would almost certainly have been standing in water. Consequently, we were forced to excavate the site for the houses. As fate would have it, we made an

unfortunate choice of a locality, for we chanced to stumble into the middle of a stone slide, which was, in fact, as it turned out, little better than a veritable stone quarry. Towards the upper end we had to blast out almost every foot of the ground. We shifted tons upon tons of stone, hauling them with the horses down to the boulder-strewn margin of the lake. The excavation of the site for the greenhouses occupied five men for nine weeks. We were, of course, prevented from beginning the work of construction until the whole of the site was excavated and levelled, for fear that the blasting would shatter the glass, or even smash the spars and rafters. The houses were built and glazed throughout by two young men named Arthur and William, the former an Englishman, the latter a Canadian from Manitoba. The winter was, on the whole, so mild and open that, despite the heavy snowfall, they were able to continue the work almost without interruption all the season.

As the work drew towards a finish, the constructors took it into their heads that they would like to climb the mountain on the opposite side of the lake, so that they "might see what the country was like at the top." It was still buried deep in snow, as was abundantly evident from below. An experienced mountain guide whom the two adventurers consulted in Nelson warned them that they would be taking great risks if they attempted to climb the mountain at that season. Nevertheless, they determined to undertake the adventure. Then every night for more than a week before they were to make a start they were out on the snows practising snowshoeing by moonlight. I can see them still, flitting, early one morning, before it was fully light, down the front pathway leading to the lake, each with a heavy knapsack on his back. Halfway across the lake they vanished in the gloom of the morning.

ON THE TOP OF THE KOOTENAY MOUNTAINS IN WINTER.

WILLIAM AND ARTHUR,
Just Returned from their Mountain Climb.

Before setting off they arranged with us that they would burn a red flare every night to let us know that they were all right, and that they did not intend to return the following day. The first night we saw the signal light quite easily, and so, too, on the second night. A few minutes after the red flare had died down, I was called to the telephone by one of the boatmen of Nelson.

"Hello! Is that you, Mr. Bealby?"

"Yes."

"This is [So-and-so]. I say, do you know anything about those red lights on the top of the mountain opposite you? Baker Street is full of people. They are wondering if anybody is hurt up there."

"It's only two of my young men," I answered, "gone up to have a look at your country."

"Is that all? Then it's all right?"

"Yes: perfectly right. The signal you see means that—that things *are* all right."

It appeared from the newspaper next day that Nelson had been quite excited about the mysterious signals on the top of the mountain. It was feared that somebody had met with a serious accident, and was signalling for assistance. And so much did this idea gain ground that one of the doctors was actually organising a rescue party.

One of these young men, William, built me a model poultry house. It is about twelve feet square, double-boarded all over—sides, floor, and roof—with a layer of tarred paper between the two skins of planking. The floor is elevated three feet from the ground for a distance of about four feet back from the front of the house. Then it rises vertically ten inches, and then slopes at a gentle incline up to the back wall. The perches are arranged over this sloping part, and every perch is movable, being held in its place by a socket into which it drops at each end. Ventilators are made to slide backwards and forwards near the top of the back wall, and two big windows are fixed to open on hinges in the upper part of the front wall. The under part of the house, fenced in by wire netting across the front, thus affords a dry run and scratching-place for the poultry during the snowy weeks of winter. A sliding door in the vertical part of the floor and a ladder enable the fowls to go from the upper to the lower storey, and at night it is only necessary to close the sliding door, and they are perfectly safe from every kind of vermin or other enemy. Two doors in the end of the house give access, one to the run underneath, the other by steps to the upper storey. Room is found for the nests at the end opposite to the upper door and between the windows.

I have said that the dwelling-house is connected with Nelson by a waggon road. The last half-mile of this at our end is at present a true mountain road; that is to say, it runs up and down, and has several steep gradients, while the watercourses, being unconfined, have in many places worn the stones bare, so that they stick up like big knuckles, or the joint-bones of a skeleton of rock. All this proved very trying to our vehicles during the first winter. Before the snow came we used a light waggon; after it came, we made use of sleighs, one a big, heavy thing requiring both horses to haul it, the other a light box, drawn by one horse. Altogether, during that winter we had no fewer than nine breakages with these vehicles. Even the light "delivery sleigh," which I bought new, broke on two successive journeys. As soon as the snow had disappeared, I was able to induce the Provincial Government Agent to improve the road a little by filling in the worst hollows and cutting back the track in places where it had a dangerous outward slope. This road is, however, to be very much further improved.

That winter was on the whole mild. Snow fell in quantity on Christmas Eve, and remained on the ground until just after the middle of March, when the permanent thaw set in. The snow all disappeared off the ranch in less than a week, though it was, of course, considerably longer in melting off the mountains. It is this gradual melting of the snow from the lake-level upwards that ensures natural irrigation to the orchards all through the spring and early summer. The water trickles down underneath the surface, and the roots of the fruit trees suck it up as it "seeps" past them. For this reason a sloping orchard is to be preferred to one planted on the flat—at all events, in non-irrigated districts such as the Kootenays.

Soon after the snow begins to melt in earnest, every watercourse that seams the mountain-sides swells rapidly into a roaring torrent. At such times even a meek and innocent rill is apt to grow obstreperous and refractory. Of this a striking example came under my immediate notice in a somewhat unpleasant way in the spring after we settled in our new ranch.

One Sunday morning the section foreman—that is to say, the foreman platelayer for the section of railway line running through our ranch—came into the yard to tell me that the stream which tumbles down the mountain at the back of the house and supplies us with water for domestic purposes, was breaking bounds, and invading a choice piece of garden ground on the lower side of the railway track. The culvert which should conduct it under the roadway that leads into our yard was too small to take the water away fast enough, and the torrent was racing out of its stone-littered bed and threatening havoc on my property. The section foreman and his assistants set to work to break open the culvert and to widen it. Meanwhile some of his men and I sought to divert the escaping water on the upper side of the culvert in another direction, parallel to and alongside the railway track. And lo! there we were digging and delving all the morning. Our diversion effectually saved my land from being flooded; but the escaping water, having travelled some fifty yards down

the line, began insidiously to eat its way through the soft, sandy embankment, and before we were aware of it, it had made a hole in the railway big enough to drive a waggon through. However, a speedy re-diversion of the current soon stopped all further mischief in that direction.

The frost was not really severe until after Christmas. The general run was 10 deg. to 20 deg. of frost during the night, with a day temperature ranging from 20 deg. to over freezing-point. On one night only did the thermometer drop below zero, and then it registered only -3 deg., while on another occasion it touched zero. These nights were not successive. We did not feel the cold at all unpleasant except on two occasions, when an icy wind blew out of the north. The house is partly heated with hot water, and in addition we possess what is the envy of almost everybody who sees it—a large open fireplace of stone, on which we burn wood and coke together. The hot water is conveyed through the house in iron pipes, and is concentrated in each room into coils of pipes or radiators. Attached to the dwelling when we moved into it was a small greenhouse heated by hot water. The furnace which heats the water was built in a cellar underneath the dwelling-house; as it had a good reserve of heating power, I decided to use that reserve for heating the house itself, and hence the radiators.

CHAPTER XII.

In Cherry and Berry Time.

One of the most wonderful sights in a British Columbian orchard, and more especially a Kootenay orchard, is the cherry-trees when laden with their snow-white blossoms. Every branch, from its divergence from a large limb or the main trunk, right away to the outermost twig, is thickly feathered with clusters of blossom, and tufts of bloom cling even to the main trunk and large limbs. This is true of every variety of cherry alike, sour as well as sweet.

The crops are, as a rule, enormously heavy—so much so that the trees—and this applies to apples, pears, and plums, as well as to cherries—have to be well supported with props to prevent them from breaking down under the loads they carry, and even then it is no unusual thing for one or more branches to split off before the fruit can be gathered. There is, however, a way of guarding against this. Screw-eyes, with long shanks, and the threads of the screws deeply cut, are put into the branches it is desired to hold together, and then stout wire is stretched half a dozen times across from the one eye to the other. The screw-eyes should, if possible, be made of galvanised iron, to prevent them from rusting in the tree, and so injuring it. The Kootenays are famous for their cherries, as they are for strawberries and apples; while the Okanagan is regarded as the country of the peach, the tomato, and the apple. The varieties of the cherry principally grown in the former district are Governor Wood, Black Tartarian, Royal Anne, and Early Richmond. The first three are sufficiently well known in England to need no remarks. The Governor Wood is grown because it ripens early. The Royal Anne, which is a synonym for the Napoleon Bigarreau, is the prime favourite on the Prairies, and in the Kootenays grows to a remarkable size. The Early Richmond is in great demand for preserving in syrup, a form of keeping fruit for winter use extensively employed by Canadian housewives. Certainly a dish of preserved cherries, eaten along with some preparation of rice, is delicious in the early spring.

I am given to understand that the best cherries to grow commercially are the Bing and the Lambert. Both are big, dark-coloured fruits, which, having firm skins, travel well for long distances, and always command good prices. When packing cherries in the way that I shall describe presently, it is easier, more economical, and quicker to pack large fruit than small fruit, and the superior attractiveness of the larger and finer fruit is self-evident. Hence, if one were planting a cherry orchard from the beginning, it would probably be a judicious plan to select the Bing, the Lambert, the Royal Anne, and the Early Richmond. There is something to be said for Governor Wood on the score of its early ripening; but, as a fruit, it is distinctly inferior to the varieties I have named. The Black Tartarian is superfluous when you have Bing or Lambert, or both.

Although the cherry is a heavy and certain bearer every year, and although the fruit commands a ready market and a good price, there is a considerable amount of labour and expense connected with the gathering and packing of the crop.

The picking is necessarily slow work when the individual fruits are so small, and hang on the trees in such vast quantities as Kootenay cherries do. But there is another circumstance which makes the gathering of the cherry a still more onerous task. It is that the individual cherries do not all ripen simultaneously. Of three cherries on a bunch, two will be ripe and well-coloured, the third still immature. A careful fruit-grower has therefore no alternative but to pick his cherry trees over two or three times. By this means he preserves a good sample, and thus secures a better price; but the labour, and consequently the expense, of gathering are enhanced. Even then, when the pickers select only the fully mature cherries to come off the trees, two men are able to keep fairly well ahead of half a dozen packers.

By this time our force of hands had been augmented by half a dozen more. Early in April our two elder girls, whom we had left behind in England to finish their schooling, came out to join us, accompanied by Mr. Braine, brother of some Finchley friends. The cherries and the berries gave their unemployed fingers something to do.

CHERRY TREES IN BLOOM ON WELLAND RANCH, WEST ARM OF KOOTENAY LAKE.

Cherries are packed into little square cardboard boxes called cartons, which have a narrow margin or flange all round the top, but no lid. Underneath, two flaps are folded together and held fast by a tongue in the one inserted through a slit in the other. To pack the carton, it is held face downwards on a small flat slab of wood, and the cherries are placed in one by one, care being taken that no stalks show below the cherries. The fruits are arranged in perfectly regular rows both ways across the carton, until the bottom (eventually to be the top) layer is completed. The first row finished, many packers drop the cherries in by little handfuls until the carton is full. It is better to pack each layer to the top in the same way as the first. This ensures a level face and fills the carton even in the corners, which otherwise are apt to show hollow spaces. When the carton is full, the flaps are folded over, and the tongue is inserted into the slit. The carton is then carefully turned over, the flat slab of board being preserved in close contact with the face of the carton—otherwise the cherries will fall out.

It is very important, not merely as a question of commercial honesty, but to prevent the fruit from shaking about and becoming bruised in transit, that the cartons should be quite full, so as to have no room to shake.

Eight of these cartons fit exactly into a small, shallow wooden box, and after facing them with clean, white paper, the lid is put on and nailed down, the box properly labelled, and it is then ready for market. Some packers nail the lid on the box first, place the cartons in it, fill them, fasten them up, and then nail on the bottom of the box. It is a quicker method, but allows no opportunity to examine the faces of the cartons after they are packed.

In our case the cherries gathered every day were all packed up and boxed by ten o'clock, or, at the latest, by eleven o'clock, at night. The boxes were placed outside the house, under cover, but in the open air, on a side where the rays of the rising sun were unable to reach them, so that by the morning they were always cool and ready to travel to any distance. Very many Kootenay cherries go as far as Winnipeg, 1,100 miles by rail from Nelson; consignments have travelled from Nelson to Montreal, a distance of over 2,500 miles, and arrived in perfect condition. We put our boxes on board the outgoing boat at four o'clock in the morning, the boat coming inshore immediately opposite to the house and picking up the fruit from a floating raft moored to a tree stump.

In the same way we shipped out our strawberries and small fruits, such as raspberries, black and red currants, gooseberries, and blackberries. All these fruits are packed, not in cartons, but in small square chip boxes, without lids, each holding one pound of fruit, and four-and-twenty of them going into a wooden box divided vertically across the middle, so that there are on each side of the partition one dozen chip boxes, known variously as punnets, fillers, cups, and hallets. These also are arranged in two tiers, six above six, thin spars of light wood being used to keep the upper punnets from squeezing or pressing upon the fruit contained in the lower punnets. Sour or preserving cherries go to market in the same way.

The spirit of malicious sportiveness which has dogged so many of our proceedings in the country of our adoption lay in wait for us again in this new work. The first morning that we had fruit to ship out—strawberries and cherries—I myself accompanied Calaby to the float, to make sure that everything should go off satisfactorily. And it did! We signalled the steamer by waving a white flag until she blew a toot of her siren in response. Then we stood patiently waiting beside our boxes, a goodly dozen of them in all. Up came the colossus towering high above us. I turned my head to point to the end of a big log that was half submerged in the water immediately in the line of the steamer's bow. At that instant the end of

the heavy landing bridge was dropped on to the middle of our float. There was an ominous crack, and the next moment I was up to my knees in water, and several of our fruit boxes were floating half-submerged in the lake. The heavy landing bridge had broken through the middle of our float, leaving us without a platform to stand on.

The eventual loss was not so great as might perhaps have been expected. We unpacked our boxes, spread the fruit out thin on newspapers on the verandah to dry, and in the course of a few hours we were able to repack it. I sold it frankly for what it was, and made very nearly the full price of it all, except one crate of cherries.

The gathering of the strawberries, although requiring a proportionately large number of fingers, is not so onerous or so slow an operation as the picking of cherries. I ought to have said that some growers use for the latter purpose a small tin receptacle like a pint mug, with a pair of flexible scissor-like clippers at the top; but my pickers, after giving these mechanical tools a trial, unanimously preferred the old well-tried instruments of thumb and finger.

To return to the strawberries. There are various methods of gathering this fruit, the method employed being determined principally by the acreage and the amount to be picked. In some localities the Indians are employed as pickers, just as they are employed to pick hops, for example, on Lord Aberdeen's Coldstream estate at Vernon in the Okanagan Valley. When the berries are picked by Indians, they are all taken into the packing-house, turned out on tables, graded, and packed there. Where the crop is smaller, and the pickers are more under control and capable of exercising better judgment, it is usual to pick the berries straight into the punnets or chip boxes, the punnets being filled three-parts full. These are then collected and taken into the packing-room, where they are filled up with other berries, neatly arranged in regular order, so as to give the punnet a more attractive appearance for selling. If a grower has a proper regard for his fruit, and desires to have it arrive in good condition, he will not gather it during the heat of the day, but will discontinue picking between 10 a.m. and 4 p.m. Even then, it is still necessary that the strawberries should have time to cool down before being shipped out. If they are shipped warm they will not travel well, especially if they are the softer varieties. The harder varieties, if properly cooled, placed in cold storage, and put into an iced refrigerator car on the train, will keep perfectly sound for four or even five days, sufficiently long to allow of their performing a journey of over 1,000 miles. In fact, one of the chief markets for Kootenay strawberries is Winnipeg, which, as I have already stated, is 1,100 miles from Nelson. In 1908 a consignment of Kootenay strawberries, after being properly cooled, were shipped a distance of no less than 3,000 miles, and arrived in good condition.

A KOOTENAY LAKE STEAMBOAT.

Twenty-four berry punnets are packed into a crate, in the same manner as raspberries and currants. These crates sell for prices ranging, under ordinary circumstances, from $2 (8s.) up to $3.50 (14s.) wholesale. The total cost of production and selling has been estimated at $1.25 (5s.) per crate, so that, the heavy yield being borne in mind, there is a sufficient profit. The average gross yield per acre is put generally at $500 (£100), and several growers have asserted that their strawberry crop has produced double that amount. The division between cost of production and net profit would be 40 per cent. and 60 per cent. respectively. It is important to remember that this crop does not cover the whole of the ground; the strawberry plants occupy the ground between the young fruit trees during the four or five years that these are growing up to the bearing stage.

Strawberries are the fruit that the Kootenay fruit growers rely upon principally to earn them an income during the early years of their orchard. The fruit, when well marketed, does indeed bring in a satisfactory return. But it can only be marketed on the co-operative system; and unless a district is thoroughly well organised and efficiently managed, there is

apt to be loss and consequently disappointment in the marketing of the fruit. I am alluding to the smaller growers, who do not produce sufficient berries to be able individually to ship out a carload at once. For the carload is the unit of shipment, especially if the car is to be iced. It is, of course, unwise not to have it full, for the freight cost will be the same whether the car is wholly or only partly filled.

I cannot help thinking that, all things considered, it is a mistake to rely exclusively upon such a perishable commodity as strawberries to tide the fruit rancher over the early years. Potatoes, for instance, are nothing like so precarious a crop, and not only can they be dug under less insistent pressure than strawberries can be gathered, but also there is a certain amount of latitude and choice in the time at which they may be sold. At Bonnington, on ground that was simply dug, practically used in a state of nature, we obtained a yield of three tons per acre. Had the land been properly worked and properly manured, and had the potatoes been planted a month earlier than we were able to get them in, the crop would have been at least 50 per cent. heavier. Say, then, the yield is 4½ tons per acre, which is equal, in Canadian measure (1 ton—2,000lbs.), to 9,000lbs., or ninety 100lb. bags. Take the selling price of these at $1.25 per bag, and we get a yield per acre of $112.50 (£22 10s.). This figure might very easily run up to $135 (£27) per acre. In the spring of 1909 potatoes were selling at $3 per bag. This, on the low basis of yield assumed above, would have yielded $270 (£52). The cost of production of an acre of potatoes is, of course, very much less than the cost of production of an acre of strawberries.

If the fruit rancher prefers to pin his faith to strawberries, the question of varieties becomes a matter of paramount importance. If the berries are to travel 1,000 miles, it is imperative that they should have firm skins, so as not to bruise. Numerous varieties have been experimented with; but only two appear to answer the requirements of the case. These are the Magoon and the Clark's Seedling. The Hood River fruit growers in the State of Oregon, who stand in the very forefront as scientific producers of fruit, grow nothing but Clark's Seedling. The British Columbia growers, including, of course, those of the Kootenays, are recommended to plant the Magoon. I have had experience of both, and I see very little difference between them. If there is any difference it probably lies in this, that at the shipping stage—they are picked before getting dead ripe—the Clark's Seedling is probably a little the more attractive in appearance. Still, that is only an individual opinion, and it may be a minority opinion. At all events, it is conclusively established that one or the other of these two varieties is what the beginner in fruit ranching in British Columbia must select for planting.

The mention of Hood River suggests the pre-eminent success with which the fruit growers in that region have co-operated for the purposes of their profession. By exercising an inflexible discipline, they have established a reputation for absolutely perfect fruit—absolutely perfect crates of strawberries and absolutely perfect boxes of apples. In consequence of this, they are able to secure the very best prices in the market for both kinds of fruit, prices which are always ahead of the average market prices. What Hood River has done, surely other districts should be able to do! In point of fact, notwithstanding the unfortunate results which have attended the endeavours of certain fruit-growing districts in British Columbia to follow in the footsteps of Hood River, complete success *has* been achieved by other districts in that same province. The Victoria Fruit Growers' Association, for instance, did not lose one single cent through their sales of strawberries in the season of 1908.

CHAPTER XIII.

The Fire Fiend.

One of the most valuable assets which the province of British Columbia possesses is her extensive forests. The Provincial Government is fully alive to the importance of this asset, and has taken legislative and other means to preserve the live timber. Fire wardens are appointed for each district, and settlers and others who cause forest fires are heavily fined. In spite of these precautions, there is a woeful waste of good timber every year. A spark from a passing locomotive, the ashes from a half-smoked pipe, or any similar cause, is enough to start a fire, especially when woods and scrub and fallen leaves are all parched by the sun. Once started, a fire may smoulder for days, its presence hardly suspected, owing to the fact that it spreads by means of a species of dried-up moss, which forms a carpet immediately underneath the surface. It is this moss which smoulders, breaking out every now and then into little tongues of flame, to which nobody as a rule pays heed. Nevertheless, these little tongues of flame may be instrumental in causing thousands of dollars' loss.

In the height of the summer of 1908 the prosperous mining town of Fernie, in the Crows' Nest Pass, was almost entirely destroyed. Those tiny fires were known to be lurking in the forests on three sides of the town; but they were so insignificant that nobody paid attention to them. Suddenly a high wind sprang up and swept through the pass, and instantly the whole of the town of Fernie was enveloped in flames. The houses, being built, as the great majority of Canadian houses are, of wood, licked up the flames, crackled, collapsed, and sank into ashes. Several lives were lost, a great amount of property was destroyed, and much suffering was inflicted upon the survivors before they were able to get themselves comfortably housed again.

To read of a disastrous conflagration like this at Fernie, two hundred miles though it may be distant from you, is distressing enough. But when the danger appears at your own back door, you realise what it means with very much greater vividness. Within less than a fortnight after the Fernie outbreak we did have the danger appear quite close to Welland Ranch, and that in three separate places. Two were on our own property. The third, a far more serious affair, was not more than two miles distant.

One night, when Calaby had gone into Nelson with the waggon and team after tea, he had not returned at considerably over an hour beyond his usual time. Only a week or two before, while he had been hauling a load of earth for the greenhouses over a steep ridge which strikes across the road, the waggon, when half-way up the ridge, had suddenly begun to run backwards, and before the teamster was able to prevent it, it had slipped off the road, down the embankment, and turned right over on its side. Luckily, Calaby had the horses well under control, and was able to prevent them from following the waggon. With this incident in her mind, and also the breakages of the winter before, Maggie naturally grew anxious when the waggon was so long behind its usual time for returning. At length she could restrain her nervous anxiety no longer. She rose and went out of the back door into the yard, whence she would be able to command a view of the road for a short distance.

After the lapse of half a minute she was back again, crying in excited tones:—

"John! John! Oh, do come! There's such a blaze just outside the gate!"

I could not conceive what there was in the spot indicated that was capable of going into a blaze. All the same, I ran out as quickly as I could. It might be the wooden fence that was on fire. It might even be the stable.

As soon as I reached the gate, I saw, only ten or twelve feet from it, a big stack of ties, or railway sleepers, blazing away with long tongues of licking fire, and the wind was blowing them and the sparks which rained off them in showers directly towards the roof of the stable. There was not a moment to lose. Running back a few yards, I caught at a prop which held up a branch of the nearest cherry tree, and with it I attempted to lever down the topmost of the burning ties. The prop broke off short in my hand. Still, enough remained, and I stuck to the work. Very soon I was receiving valuable assistance from Lawrie, who had somewhere found a long stout piece of iron, which he used very effectively as a lever. Nor were the other men of the place at all backward. Our first efforts were directed to saving a big telegraph post belonging to the railway, for the ties were stacked up, almost touching it. A few minutes' frantic pushing and pulling and levering enabled us to throw the worst of the ties apart. The telegraph pole was saved; but our stable was still in jeopardy from the sparks.

Meanwhile Maggie, Frances, Dorothy, Leslie, and Olive were carrying buckets of water, and pouring them on the ties as we pulled them apart. In the midst of the confusion Mrs. Lawrie was so upset by the occurrence that she fainted away, and one member of our scanty forces had to be withdrawn to attend to her and bring her back to consciousness. As soon as the ties were pulled apart and lay scattered singly over the roadway, we all took our turns at the buckets, and it was not long before we had the fire completely extinguished. The cause of the pile igniting was no doubt a spark from a train which had passed about half an hour before.

The next alarm of this nature that we had was neither so imminent nor so menacing; but, on the other hand, it was a good deal more obstinate and difficult to subdue. It occurred the very next night after we put out the blazing stack of railway ties.

FRUIT RANCH, WEST ARM OF KOOTENAY LAKE.
Young Strawberry Plants in Foreground.

Calaby, in the course of a week's relief from other work, had begun to clear a piece of new ground beside the upper orchard. He cut down the scrub—big trees there were none—and piled it into heaps, and, having added to these the stumps and roots which he grubbed up, proceeded to set fire to the stacks of rubbish. These burned for two days, and then the fires died out, or appeared to do so. To make sure, I myself went along one evening, and came back satisfied that there was no danger from that quarter. Imagine, therefore, our surprise when one night, fully a week afterwards, the very night, as I have said, after the stack of ties caught fire, we beheld two or three columns of smoke curling up near the spot where the clearing had been done, and a haze of smoke hovering amongst the trees a little higher up the mountain side. Two or three of us hurried off to see what was amiss, and on breasting a ridge of the road that had hitherto intervened, we saw flames dancing merrily in the underbrush.

A hurried visit convinced us that there was no immediate danger. Some half a dozen prostrate logs were burning in half a dozen different places, and the entire floor of the forest appeared to be aglow, for incandescent edges or ribbons of fire showed themselves in every direction. But although there was, so far as we were able to judge, no immediate danger, there was undoubtedly a risk of the fire spreading to the upper orchard, which was not more than two hundred yards away. Once it were permitted to get a hold there, nothing could save my fruit trees, and these were my best trees, ten years old, and bearing fruit every year. The fire must be checked in that direction at all costs.

We attempted to break up the fire by dragging away the loose branches and dead sticks, by chopping through the logs and leaving the portions that were alight to burn themselves out, while we removed the sound pieces, and by extinguishing the burning carpet of moss. This last we endeavoured to effect at first by stamping on it; but every stamp, whilst it put out the incandescent glow immediately underneath our shoe soles, only made it gleam out in four or five other places round about. Then we tried to beat it out with sticks, and after that with hay forks. This last method proved the most effective. By dint of labouring until after midnight, and carrying water from the lake up and over the railway embankment, we managed to get the fire, if not subdued, at all events under control.

By the next morning it was blazing out afresh in two or three places. A brief attack was all that we were able to spare to it then; other work had to be attended to. But after dark, when the regular day's work was done, we returned to the attack, and this time with a still greater measure of success, though we had any amount of trouble to put out the stubborn moss. Just where these fires were burning there were several large boulders, and it was in the hollow spaces underneath these that the ignited moss bade us defiance. And it was only after we had laboriously barricaded it in with earth banked all round with stone, and thus smothered it, that we were able to feel satisfied that we had conquered.

Our anxieties from the risk of fire were not yet over. The very next night following, which was pretty dark, somebody came in and told us there was a big fire burning two miles higher up the lake. At first we paid little heed, not realising that it was anything out of the common, because we had grown accustomed to seeing bush fires on the opposite side of the lake all the summer through. But by the time we were ready for bed the aspect of the conflagration was greatly changed. It was evident that it was no ordinary burning of scrub which we beheld, but something much more serious.

At the spot where the fire was visible the lake makes a bend. From our point of view it was a bend to the right. The fire was spread all over the slope of the mountain which faced us on the far side of the bend. Everywhere, up and down, and across and across, the face of the mountain was streaked with long, scintillating lines of blood-red glare, with pillars of vivid brightness here and there. In some places these columns of fire were so close together as to convey the impression of curling crests of a sea of fire, but a sea of fire tilted up on the distant horizon in such a way that we could see the whole of it, hanging, as it were, like a curtain from sky to earth. The illusion was heightened by the dark masses of the foliage showing up like the hollows between the breakers of flame. It was not a steady, quiet, persistent blaze; the flames were everywhere in movement, full of darting, devouring energy, waxing, waning, dying out, leaping up afresh, now here, now there. Had it not first suggested the idea of a tumultuous sea of fire, it might, perhaps, have shaped itself in the imagination into the image of a host of flambent snakes, writhing in torture, striving to break through an imprisoning curtain. We watched the scene with eyes of fascinated awe, thankful that we were no nearer to it than we actually were.

For two nights and the intervening day the fire continued with the same intensity. On the third night it was still going on, though abating. By the fourth night it was almost impossible to discern either streak or glow. It was practically extinct.

This conflagration originated, it was understood, from bush fires made by a fruit rancher in the vicinity. It entailed upon him, I was informed, a fine of $150 (£30).

CHAPTER XIV.

Water Worries.

Half-way up the slope of the upper orchard, and not far from the foot of the mountain, we caught our stream in a small reservoir, and thence conveyed it in an iron pipe to the house, where it served in scullery, kitchen, lavatory, and bathroom. It was a capricious brook, and sometimes failed us; but had we not a steel windmill and pump standing within a few feet only of the edge of the lake? Had we not a tank capable of holding 7,000 gallons close to our back door? Had we not just put underground a long pipe with connections all over the greenhouses to carry the water from the tank by natural gravitation to the tomatoes and other thirsty plants making haste to outgrow the hot summer sun under the protection of glass and "burlap" blinds? And, finally, had we not trained an elaborate system of surface pipes, with standards and taps, across a large area of the ranch, so that we might be able to supply water from close at hand to our chrysanthemums, dahlias, roses, and other valuable plants?

A tempest sprang up one afternoon. We hailed it with delight. Our tank would speedily be filled again. Alas! the windmill suddenly broke. An important casting had snapped, and we learned (by telephone) that a new casting could not be instantly found in Nelson.

"How long shall we have to wait for a new piece?"

"About a week."

Just then, owing to the great heat of the sun and the long drought, we used a very large quantity of water every day. Even assuming that the tank were full—which, as a matter of fact, was not the case—it would have sufficed for all purposes little more than two days. How, then, were we to obtain a sufficient supply for a whole week? To carry up water from the lake in such quantities as we should need was not for one moment to be thought of.

Lawrie, however, with his usual happy instinct when a difficulty confronted us, affixed one of the long rubber hoses to a stand-pipe in the water pipe from off the mountain, and lifting the other end over the edge of the tank, thus compelled the stream to do the work which the mill had suddenly refused to do. And it obeyed—it yielded—for one night! Next day, even in the morning, when we hurried in to sniff up the savoury odour of porridge, there was not a drop of water to be drawn off the mountain. The mountain stream had dried up again—before the day's work was begun. And the windmill was broken!

That day it was hotter than ever, and the next, and the next day after that—not a pin to choose between them. Our tank was nearly empty. Telephoning frantically to inquire if there were no news of the casting, I was answered, "Not come yet. Know nothing about it."

And this went on for four days longer. We were forced to put our chrysanthemums, our dahlias, our roses on short commons; then to withhold water from them altogether. What little there was in the tank must be husbanded for the begonias, fuchsias, and so forth under the glass. Three or four trees of early apples were not plumping out their fruit as they ought to do. A row of young fruit trees, planted temporarily on the slope of the orchard until we should be able to clear permanent abiding places for them, began to show leaves of a yellowish hue. The state of affairs was serious. One thing was, however, sure. We must provide water at all costs to the greenhouses. Which would it be better to do—haul water day by day from the lake in barrels, or pump by hand? To haul from the lake would have kept men and horses busy all day and every day. It was not to be thought of, except as a means for the salvation of fruit trees, chrysanthemums, dahlias, roses. We used the pump. Four of us wrought at it for two hours one morning, and we nearly filled the tank.

Two days later water from the stream began to come again; but even then we were not done with trouble. Our windmill, after being repaired, ran only a short time before it broke again, and until the rains came, some three weeks later, the stream continued to act intermittently.

The winter of 1907-8 was comparatively mild. That of 1908-9 set in with sharp frosts before the snow came, which was three days earlier than in the year preceding—namely, December 22. On the night of January 4-5 the temperature dropped between twenty and thirty degrees, and when we awoke in the morning we found by our minimum thermometer that it had been as low as -8 deg. Fahr. during the night. That was five degrees colder than the coldest night in the winter of 1907-8, and two degrees colder than had been recorded at Nelson for nine or ten years. On the following day a fierce

wind came out of the north. It penetrated at every cranny and crevice of the house, of the greenhouses, of the stables. It searched in underneath the foundations, and thrust its freezing breath up through the chinks of the uncarpeted floors. It froze the milk in the dairy, the potatoes in the scullery, the water in the buckets in the kitchen. If water was accidentally spilled on the floor, it froze, even though only three feet from the stove. A bucket of ice and water brought up in the evening from the lake, and put in direct contact with a big radiator, remained ice and water in the morning. During the night the water froze in the kettles on the stove. The wind blew all day on Tuesday, January 5, and all day on Wednesday, January 6, the thermometer dropping during the two nights to -10 deg. and -13 deg. respectively. Then the wind ceased. On Thursday night the thermometer registered a minimum of -16 deg., and on Friday night -19 deg. It had never been known to fall so low in the history of Nelson as an inhabited place, and the records of that history went back for a space of over twenty years.

We began the spell of cold weather with about six tons of gas coke in hand. We soon realised that there was a very serious risk of our running short. The gas works announced that their stock was exhausted, and owing to the severity of the weather they were compelled to use their own coke to heat their own retorts as fast as they made it. The coal dealers declared that they had only six or seven tons of coal in hand, and that all except two tons was sold already.

"Can I have those two tons?" I asked.

"Sure. But you had better get them away at once. We may not be able to hold them for you."

I got them away at once. Then I wanted more. Fuel of some sort I *must* have. Fortunately, through the kind instrumentality of a friend, I got hold of a carload of coke, and, what is more, I got it brought within a mile of the house, and we began to haul it on the Saturday, the fifth day of the "blast." Meanwhile, Lawrie was knocked up with stoking. He had been forced to sit up all night for three nights, and stoke almost every hour.

1. VIEW OF KOOTENAY LAKE IN WINTER, FROM WELLAND RANCH.
2. BUILDING GREENHOUSES IN THE SNOW.

When Lawrie knocked up, Calaby went on to night duty. But how were we to get our coke hauled? After forty-eight hours railway demurrage would begin to count against us. Fortunately, a neighbour came to our relief, and by working all day on Sunday we kept our furnaces going and held winter at bay outside of our greenhouses. But it was a desperate struggle!

Meanwhile the pump froze, the tank froze, the stream froze. We could get not one drop of water, either in the house or in the greenhouses. There was only one resource to fall back upon—the lake. On the Wednesday afternoon Mr. Braine and I, taking an axe and a couple of buckets each, went down to the water's edge, hoping to get water with which to fill up the barrels and reservoirs inside the greenhouses. The waves, which the fierce wind drove hard against the shore, froze as they fell, covering the stones with a thick coating of ice. They were whipped into spray, which turned into ice the moment it touched anything solid, and the edge of the water, or rather the margin of the sand, was slippery. When I dipped my buckets into the hole that we had chopped in the ice, I naturally turned my back to the hurricane. Upon reaching the shelter of the greenhouses, I found my back covered with a plate of ice. Although I wore two pairs of thick, warm gloves, I had to thaw out my fingers before venturing forth again. Mr. Braine and I agreed that those four bucketsful —his and mine—had better go up to the house for our own use. We would defer the getting of a supply of water for the greenhouses until next morning. Perhaps the wind would have dropped by then.

And it had. During the following night the lake froze completely over. At night there was a braiding of ice four or five feet wide all round the lake. In the morning there was not a vestige of open water to be seen, and by the next day after that the ice was ten, eleven, and twelve inches thick. A man who has a poultry ranch immediately opposite Nelson seized the opportunity to take across a big waggon sleigh, drawn by two powerful horses, and filled with corn for the use of his poultry. Another man led across his working ox, and yet another drove a pair of ponies and a light four-wheeled buggy along the ice.

When the thermometer rose again, as it began to do on the following Wednesday, ten days after the first rapid fall, we kept the frost at bay inside the dwelling-house. But it was nearly three weeks after that before we were able to press the mountain stream into our service. That done, we filled our tank by means of a hose from a stand-pipe which tapped that stream, or rather the iron pipe from it. Just below the reservoir the ground had frozen to a depth of more than three feet! In the meantime, until we did get our tank into operation, we had the daily task of hauling water from the lake up to the greenhouses in a barrel fixed on a sleigh and drawn by the horses. Of course, we did not require anything like the quantity then that we needed in the hot, thirsty days of the height of the summer, so that the task was not such an onerous one. We were devoutly thankful that we had suffered no worse scathe. Thanks to our radiators, and, above all, to our open hearth, where we took care to maintain a big fire of wood and coke, we suffered no personal harm, and not much real personal discomfort once the wind dropped. We blessed our stars we were not in Winnipeg, with its thermometers down to -72 deg. Fahr., or 104 deg. of frost!

A few days after the cold "snap" broke up an agent of the Canadian Pacific Railway "'phoned" to me out from Nelson:

"How about your young fruit trees? Have they suffered any damage from the frost?"

I went and made a thorough examination, came back, rang him up, and reported, "No: I do not see the slightest damage—not a tree hurt. And in due course I shall have peaches to sell."

CHAPTER XV.

Some of Our Neighbours.

Soon after settling at Welland Ranch we discovered that we had a strange neighbour. He inhabits a tiny peninsula, dwelling in what is little better than a hole in the steep face of the shore, closed by a few planks and a sloping door flush with the earth's surface. The shore for many yards along the front of his "palace" is generally strewn with derelict logs, fished out of the lake. He employs himself sawing these up into cordwood. This is his only occupation, and the proceeds from the sale are his only source of livelihood. The man himself we seldom see, though we hear the sound of his saw almost every day. He is a recluse; and he is a Chinaman. We are informed that he is an outcast from the society of his countrymen. He is of unsound mind, and it is for that reason that the rest of the Chinks (as the Canadians call the Chinese) ostracise him. If one of us chance to meet him on the railway or on the shore, and accost him, "Good day," or with any other friendly greeting, he never speaks. Nor does he even give us a glance, but marches stolidly on as though we were non-existent.

When the first spring came we used to see him practically all day long, scouring the lake on a frail and clumsy raft of his own construction, hunting logs. If I looked out of a morning, say shortly before six o'clock, very often the first thing that met my gaze was this singular figure of the crazy Chinaman on his equally crazy craft on the sunlit waters of the lake. Several times I have been compelled to stand and watch him when one of the big ships has been approaching, steaming at eighteen knots an hour. How he contrives to keep his balance when the waves caused by the steamer begin to rock his precarious "tug-boat" is always a wonder.

On the north side of the lake, immediately opposite to the City of Nelson, there lives another singular being. He is a white man, and is known as Coal-Oil Jimmie. His domicile is a log cabin half-way up the mountain side. And when his solitary light twinkles out across the lake in the darkness, it invariably arrests the stranger's attention, and leads to question and answer.

"What is that light up there?"

"That's Coal-Oil Jimmie."

"Coal-Oil Jimmie! What's he doing up there, anyway?"

"Working a claim."

"What sort of a claim—gold?"

"Sure."

"And is it any good?"

"I don't know. Jimmie's been pegging away at it for the last eighteen years or more."

"Well, well. But why do you call him Coal-Oil Jimmie?"

"Oh! that's because, when he wants money to buy bread with, or blasting powder, he comes down into the city and sells coal-oil."

"Coal oil! You mean petroleum?"

"Sure."

The following narrative relates an incident which befell not very distant neighbours.

Picture to yourself an autumn night, a pallid moon floating among islands of scurrying cloud, a dim and baffling light on the earth, a deep, dark lake on the one side, lofty mountains capped with snow and half swallowed up in gloom on the other, and a narrow ribbon of road creeping along between the windings of the lake shore and the flank of the mountains; the wind moaning fitfully through the gorges and ravines, and whispering in ghostly cadences through the scattered forests which cling to the lower parts of the hills, and throw their shadows across the uneasy road.

Along that road creaked a rig, a small, light waggon on four wheels. In the waggon sat a man and a woman. The night was made still more eerie by mysterious sounds creeping up from the lake, dropping from the mountains, drifting out of the woods, sounds which it would have puzzled a skilled native to explain, still more newcomers such as Albert Stephens and his wife.

The horse was jogging along at a slow pace. Stephens half turned in his seat, and remained so for perhaps a minute.

"What is it, Albert?" asked his wife.

"Nothing. I was just looking to see if the carcass of mutton was all right."

Mrs. Stephens was not conscious that the carcass had moved, nor had she heard it fall out of the vehicle. She wondered.

"Get on, you beggar!" cried Stephens, and he whipped the horse. The animal responded gamely—for two minutes!

All at once Mrs. Stephens laid her hand on her husband's arm, exclaiming—

"Alfred, what's that?"

"What's what?" responded Stephens, irritably.

"I'm sure something is following us. Have you got your revolver? Listen." She half turned her head, still keeping her hand on her husband's arm.

"Revolver? No. What do I want a revolver for?"

"I'm sure there *is* something," cried Mrs. Stephens again. "Don't you hear it? It sounds like some big animal—and it's coming after us."

"Well, yes," admitted Stephens. "I fancy I have heard something for some time. The brute seems to be keeping up with us, too. Get on! get on!" And again the whip fell with stinging urgency upon the back and sides of the Indian cayuse (native horse).

But the faster Stephens urged on his own animal, the faster came the pursuing beast. They could now hear it breathing hard as it raced along after them. Indeed, Mrs. Stephens, glancing timorously over her shoulder, saw a large form labouring after them in the gloom.

"Oh, do make Bonnie go on faster, Albert," cried she, her fears getting the upper hand. "I'm sure it will catch us soon!"

"Here, Bessie!" cried Stephens. "Hold the reins a minute; but don't let Bonnie slacken her pace." So saying, he flung one leg over the seat behind him.

"You're not going to get out, Albert? You've got no gun," cried Mrs. Stephens, in tones of terror. "It will tear you to pieces." For some time her mind had been busily picturing the ferocity of a grizzly, a cinnamon bear, a mountain lion, a lynx.

"All right, Bessie, don't worry!" said her husband. By this he was heaving up the carcass of mutton, and the next moment Mrs. Stephens heard a dull thud as it dropped on the road behind the waggon.

"Perhaps that will keep it busy for a bit," said Stephens, as he climbed back over the seat, and took the reins out of his wife's hands.

And the stratagem—the sop to Cerberus—did keep *it* busy for—three minutes or so, not longer. Then the two terrified travellers once more heard the mysterious beast snorting along in their wake. But by this time they were within some half-mile of the settlement they were making for. Before they had gone another quarter of a mile, to their intense relief, their pursuer suddenly stopped, and they heard no more of it.

YOUNG ORCHARD ON WEST ARM OF KOOTENAY LAKE.

On reaching the settlement they eagerly related the details of their adventure. The men of the settlement, not relishing the proximity of such a dangerous customer, at once armed themselves, and taking with them a good dog, set off to hunt and kill the ferocious beast. The dog soon ran on ahead of them. They advanced nearly a mile without either seeing or hearing anything of the animal which had so terrified Albert Stephens and his wife. Then they came upon the carcass of the sheep which Stephens had thrown out of his waggon, and there was the dog busy tearing mouthfuls of flesh off its hind quarters. Driving off the dog, they continued their hunt. After advancing another half-mile or so, the men who were leading the way heard something, evidently some big animal, moving in a clump of scrub by the side of the road. They sent the dog in to scare the game, and posted themselves in readiness. The dog barked—and barked—and barked—and then out trotted a—harmless, innocent, ordinary donkey!

The central figure in my next incident was a neighbour only in the sense that every inhabitant of the city of Nelson is a neighbour. But the story will find a fitting place here, not only as being closely connected with our own experience, but also as illustrating one of the sides of Canadian life; although, strictly speaking, the story is British rather than Canadian.

One evening I was packing apples. The time was about half-past eight. In the room were present, besides myself, Maggie, Leslie, and Mr. Braine.

Suddenly there appeared inside the door at my left hand a stranger. He had entered by the back of the house, had traversed the scullery and a small passage, in order to reach the spot where he presented himself. He opened the door so noiselessly that we were all startled. He was a young man, under thirty years of age. His face appeared to me familiar, though for some little time I was not able to recall where I had seen it before.

"Are you the proprietor?" he asked, addressing me. There was an air of directness and resolution about him which at once arrested attention.

"Yes."

I paused in my work and glanced at him expectantly.

"Will you give me work for fifty cents?"

The request was put in such a curious and uncommon way that I looked at the man fixedly before replying.

"Well, I don't exactly want any help, as I have let a man go away only last week; but if you want a day's work, why, come back to-morrow, and I will give you one."

"Will you give me your promise in writing?" he said, putting his hand into the inside pocket of his jacket, as if for paper and pencil.

This, again, was an extraordinary request.

"Nonsense! You don't want a written document for that."

The man was persistent. At length I said decisively, "I'm not going to do anything so absurd. If you can't take my word for it, let it alone, and go."

Then, after saying, "You won't go back from your word?" he shifted his ground, and began to beg for ten cents by way of "arles," or earnest-money.

But by this time I had called the man fully to mind, and recollected the circumstances under which I had seen him. Before going further, I will relate what those circumstances were.

Early one morning we were waiting for the first delivery of cherries from the pickers. A short, round-faced young fellow, with a foreign look, came into the scullery and begged a bite of breakfast, or rather two bites, one for himself, and one for his mate outside. I procured the man what he wanted. He held out his hand to me, saying, "Thank you."

"Are you a Scandinavian?" I asked, for his action recalled a Norwegian custom.

"No," he said: "German."

I then addressed him in German; but he told me he was born in America, and could not speak German. I saw, however, that he was half intoxicated: so I dismissed him, and he went away. I never saw him again.

Ere five minutes had passed I met another man at the gate, a man young, well-dressed, and fairly well educated, evidently a town dweller, and probably a clerk or store salesman. It was the man who afterwards wanted the work for fifty cents.

"Can you tell me about the roads?" he began. "I want to get to Procter [at the junction of the West Arm and the main Kootenay Lake]; but there is a man waiting for me on the road to kill me."

"Surely not?" I rejoined.

"But there is," went on the stranger. "We have quarrelled and had a scuffle, and he is out there waiting for me. He means to do for me. Can't I get past him by any other road?"

"Not if you want to go to Procter. There's no other road except the railway track. But why not wait a bit and let the man get out of your way? Or go back to Nelson?" I suggested.

"Oh, he's one of the Black Hand [an Italian secret society which was reputed to use violence, and had its seat of operations at Fernie and other mining towns in the Crows' Nest Pass, where there are a large number of Italian working men]. He's one of the Black Hand," said the stranger, "and they've set their mark against me. I was up in Fernie at the time of the fire, and I wrote something about them in a newspaper, and now they are wanting my life."

"What sort of a man is this who is waiting for you?" I asked him. "Is he a round-faced, boyish-looking young fellow?"

"Yes: that's he," he answered eagerly: "that's he! I know he means to assassinate me."

"Nonsense! You needn't be afraid of *him*. He won't—he couldn't—hurt you. Why, he's half drunk."

"And so am I," he declared, "more's the pity! But, I say," he added, with sudden energy, "you haven't an old revolver you could lend me—have you?"

"No: I haven't," I told him, and in thought I continued, "and if I had I certainly shouldn't lend it to *you*."

I urged him, if he were afraid, to go back to Nelson. But for some time longer I had great difficulty in pacifying him. At last he begged permission to sit down outside the gate, in sight of my men gathering cherries, and with that he went away.

These circumstances I now recalled, and naturally I set the intruder down as a drinker and a ne'er-do-well, who was just trying to get a few cents out of me. Consequently, I refused to give him even ten cents. Finding he could obtain nothing from me, he went away, or, rather, started to go away. In less than half a minute he was back.

"Have you any place where I could sleep the night?" he asked. "Anywhere will do." Just for two seconds I hesitated. There was the stable, and the hay; but I did not feel I could trust the man.

"No; I'm sorry I haven't," I said. "We are full up." And so we were in the house.

He repeated his request once, twice, three times.

I turned and faced him. "I would prefer you should go back to Nelson. Good-night."

He went, and we thought he had gone right away. But no; after a full minute there he was again, outside the packing-room window. He called to me, saying, "What is your name, that I may know who has given me work?"

I told him.

This time he did go away, and I never saw the man again. Afterwards I congratulated myself that that man did not make a homicidal attack upon me. I cannot help thinking that it hung by little more than a hair's breadth when he put his hand inside his breast pocket, ostensibly feeling for a piece of paper on which I might write the promise to give him work. For in that pocket he carried a formidable weapon, and that weapon he used not twenty minutes after he had left our house.

TOBOGGANING: A SPILL. ***From "Canada Illustrated."***

In the middle of the following morning somebody came to me, saying,

"Mr. Devitt, of the Provincial Police, wants to see you."

I wondered what was wrong.

I went up to the house, for I was down in the greenhouses when the message came.

On reaching the yard outside the back door, I found the Chief of the Provincial Police for the Nelson district, with a new, blood-stained razor in his hand, and two young bloodhounds sniffing about the yard.

"You had a visit last night from a young man?" he began, and then he went on to describe him.

"We found him," he told me, "at one o'clock this morning, not far from the C.P.R. shipyards, with his throat cut, and I have just picked up this razor near the big rock." (This was a quarter of a mile from our house, and half a mile from the spot where the man was found.)

"And is he dead?" I asked.

"Yes," said Mr. Devitt. "He was dead—stone dead—when we found him. His head was almost severed from his body, and he lay in quite a pool of blood. It looks like a most determined case of suicide, though it might be murder. I just want to make sure. Was the man alone when he came to you?"

"Yes, so far as I know. I did not see or hear of anybody being with him."

"Did he appear to be at all strange?"

"He appeared to be quite rational and collected; but he made absurd requests. The fact is, I was busy packing fruit, and did not pay much attention to the man's demeanour. But he thoroughly frightened my people, and my little boy, who is not at all a timid boy, took his gun to bed with him. And my gardener, Lawrie, tells me he was watching the man for some time outside. The stranger went backwards and forwards between the house and the gate fully a dozen times. I find he went to the Lawries' door first, and even then Lawrie's suspicions were aroused by the man's behaviour. Lawrie thought at first he was drunk; but he soon came to the conclusion that the stranger had not had any drink that day."

I proceeded to tell the Chief of the Provincial Police all I knew about the man. When I had finished, he observed, "It looks pretty certainly a case of suicide. I think I may safely act on that."

He then told me what they had been able to find out about the man from letters in his pocket. He was a young Scotsman, and had been a clerk at one of the larger towns in the west of Canada, and had actually been in Fernie for some time, but had apparently come to Nelson after Fernie was destroyed by fire. In Nelson, in the course of only a few weeks, he had had two situations, but had lost both through his drinking habit, having been discharged from the second the day before he came to us.

From what I learned subsequently, the suicide's movements, after he left our house, were these. He walked a quarter of a mile, and then cut his throat with his razor, a new one with a white handle. Going on a quarter of a mile farther, and seeing a light in a house by the roadside, he had been unable to resist the feeling of burning thirst which assailed him. He had struggled to Mr. Habegard's door and knocked, and when the door was opened he stumbled in, gasping, "Water! water!"

Mr. Habegard put out his hand to hold the intruder up, and while he was doing that, Mrs. Habegard exclaimed, "What's that on his neck? It's blood!"

Mr. Habegard stepped back, and then saw the wound on the man's throat.

"Did you do that?" he asked. But the stranger made no answer. They gave him the water he craved, and he went away. Mr. Habegard deputed his son, a lad of sixteen, to follow the stranger, while he himself, having asked a neighbour to go and stay with Mrs. Habegard, pushed on to the C.P.R. shipyard, and from there telephoned to the Chief of the Provincial Police.

When the officer came, he and Mr. Habegard walked back towards the house of the latter, and after going about a quarter of a mile they came upon the suicide lying in the middle of the road, weltering in his blood, his head being nearly severed from his body. He had made a second attack upon himself with his penknife.

The man was demented with hard drinking, and laboured under delusions. First, he imagined he was being dogged by the Black Hand organisation of the Italian workmen; then he believed that his life was threatened by an assassin. It was while labouring under this insane delusion that he destroyed himself.

CHAPTER XVI.

Canadian Life and Manners.

The change from England to Canada is one that, as far as personal conditions go, presses more hardly upon women than upon men. In the latter country domestic servants are really scarce; when they are found, they can only be described as pearls of great price. You have to pay them three or four times what you pay a good servant at home. And they are not all good that are obtainable in Canada. Hence you have to adopt the policy of Mother Hubbard's dog, and do without.

This means, if you are not near a convenient store, that your wife has to make and bake her own bread, to make her own butter, to do her own washing.

The Canadian housewife not only makes her own bread; she stocks her larder with all sorts of preserved fruits—pears, peaches, crab apples, strawberries, cherries, and so forth. These are all preserved in syrup in hermetically-sealed glass jars. She also revels in jellies, chutnees, tomato sauce, piccalillies, and so forth. Jams, the toothsome, old-fashioned, yet ever-welcome jams of her English sister, she "has no use for," as she would say. Evidently the youthful Canadian palate is not yet educated to them. Yet for that same palate "candy" has as irresistible an attraction as "sweets" have for the young son or daughter of Old England.

At a Canadian meal, especially if you take it in an hotel, you select your food from the *menu*, and you are served with what you select—meat, potatoes, cauliflower—each on a separate small dish, so that, if you exercise your privilege pretty widely, you speedily find yourself entrenched behind quite an array of culinary bastions, which would excite the dismay of an ordinary diner, unless pricked on by the stimulus of an extra dose of mountain air. As a rule, all the meals in an hotel are *table d'hôte* affairs. You have to eat at the times when meals are ready, or wait until they are. Fortunately, the opportunities for eating while you travel are ampler and more convenient than they are when travelling in England. Nobody need arrive late at his hotel and go to bed supperless. Three meals are generally taken—breakfast, dinner at noon exactly, and supper at 6 p.m. Tea or coffee, preferably tea, is drunk at all three meals, even at dinner. On the other hand, in the ordinary course of things, intoxicating drinks never appear on the Canadian dinner-table, and even at formal banquets they are generally absent.

Into the mysteries of "sweet corn" (maize ears boiled), maple syrup, squash pie, pumpkin pie, and so on, my courage will not avail to conduct me. These things must be eaten to be appreciated. On the whole, from what I have observed, the Canadians would appear to be moderate eaters, although good cooks can everywhere command unusually high salaries. A skilled man cook, who can wrestle successfully with the ordinary range of plain dishes, can command $70 to $80 per month, with board, at a mining or lumber camp; but then he may have anything from forty to one hundred and forty men to cook for, and as many "masters" to grumble at him.

In the matter of dress there is not much difference observable between England and Canada. Many of the working men in Canada habitually wear gloves, in summer and winter alike. In winter gloves are necessary because of the cold, and in summer they are almost indispensable for certain kinds of work, because of the parching quality of the atmosphere, which soon causes the skin to crack. Overalls, covering a man from the chin to the toes, are generally worn, not only by working men, but also by all sorts and conditions of men, even by a merchant in his store or warehouse.

In winter the best and most convenient clothing, especially for out-of-doors among the snow, is a good thick jersey, and if more than an ordinary jacket is required, the most serviceable addition is a mackinaw jacket, made of thick rough frieze, with knitted, tight-fitting cuffs inside the sleeves, and a very high collar. Protection for the ears is indispensable in sharp frost, especially if the wind is keen. It is good to wear very coarse, thick woollen stockings, known as German stockings, outside the trousers, and over them coarse rubber shoes, loosely laced, or else high boots, into which the bottoms of the trousers are tucked. School children wear knitted toques, which in shape are something like the old-fashioned night-cap of our grandfathers, only they are more pointed and more ornamental. In sharp weather these can be pulled down over the ears. It is good to see a party of young Canadians with their bob-sleighs, flexible fliers, and what not, gliding down a steep incline with the speed of the wind, filling the frosty air with their crisp shoutings and their merry laughter. Their happiness is irresistible; it sweetens the heart, it beautifies life. If the songs of the angels have any analogies on earth, assuredly it is the gleeful play of children!

Now, the wearing of gloves must not for one moment be taken as a sign of effeminacy. Whatever faults may be alleged

against the Canadian character, effeminacy is the very last that anybody who has had experience of it would dream of imputing to it. The keynote of the Canadian character, at all events out West, is energy. Your Canadian is always in good spirits, always hopeful, prompt in his decisions, swift to act, full of resource. A distinguished Scottish visitor recently epitomised the practical creed of the West as consisting of faith, hope, and muscle. In this there is not more than that amount of inaccuracy which is the inevitable toll of wit. It is the buoyant spirit of the Canadian which enables him to adapt himself so readily to changing circumstances, and, taken in conjunction with his upbringing in a new country, where personal ingenuity so often has to supply the lack of convenience, it is that same spirit which makes him so capable a man in a sudden emergency. One of his favourite phrases is that a man is "up against it"; it is when he is in such a position, which may be defined as "being in a tight corner," or "with his back to the wall"—it is then that the really great powers of resource lying latent in every Canadian prove his salvation. And when he really is "up against it," and has to cope with a difficulty, he shows a striking absence of fuss or worry.

On the other hand, this very spirit of all-subduing hopefulness, and this well-proved self-confidence, are probably responsible for what may perhaps be regarded as a blemish, or, at all events, as a lurking tendency to detriment, in the Canadian character, namely, the want of foresight. The fact that the telephone is ever at his elbow, ready to serve him at a moment's notice, tends to strengthen that tendency in him in a way that he probably does not yet sufficiently realise. With these allies at his back—his hopefulness, his self-confidence, his resource, his swiftness in action, backed by the telephone—your Canadian has no dread of difficulties. When they come, they do not daunt him. When they are overcome, he does not exult. They have been part of the everyday routine of things; the overcoming of them has formed part of the daily tale of duties to be done.

These same qualities of mind, acting and reacting upon the almost infinite possibilities of a new and undeveloped country, have engendered in the Canadian of the West a marked love of speculation, an ever present readiness to dare and do, and to risk all on the toss of the dice. A man having a sum of capital at his disposal is not content to invest it, even when he can do so on the safest security, for a return of seven, eight, or even ten per cent. Nothing less than the chance to double it will satisfy him.

For instance, a certain gold mine was abandoned by the lessees as being practically worked out. One of the men who had been using the pick and blasting powder in it believed there was still enough of the precious metal in the mine to warrant a further trial. He secured a fresh lease of it for a small sum, and went out to begin work upon the mine single-handed, having barely enough money to furnish himself with the necessary tools and provisions to last a few weeks. At the end of two years that same Italian workman had over forty men in his employ, and a balance in the bank of $50,000 (£10,000), and sufficient ore lying outside the mine, ready to be "rawhided" down, to yield him another $50,000. It is strokes like this which feed the never-extinguished lamp of fervent hopefulness and fan into a flame the ever-glowing embers of speculation in the breast of the Western Canadian.

Rawhiding, I may explain, is a name for a method by which metallic ore taken out of a mine is conveyed down the mountain side. The ore is crammed into strong bags, weighing approximately 200lbs. each. A few of these are packed together on the raw hide of an ox, and the hide is then dragged down over the snow by a horse.

Another channel by which the predominant impulses of the Canadian flow out into the fields of fruitful action is his keen love of sport, especially the national sports of hockey (on ice) and lacrosse, though all sorts of games, and not the least the art of boxing, claim their proportionate share of his personal interest. And where his personal sympathies are involved, there his purse is not wont to be niggardly in its backing. A hockey contest between two neighbouring communities stirs each community to its depths. The interest excited affects every stratum of the social life. The great struggles for the Stanley Cup, the supreme trophy of Canadian winter hockey, are talked of for weeks beforehand. They are described in fullest detail in every newspaper throughout the length and breadth of the Dominion. The contestants are heroes, the winners demi-gods. And, indeed, no man can witness the swift and sudden alternations of the game, the brilliant rushes down the rink, the inevitable collisions that appear to be imminent, the marvellous swerves, glides, and feints by which the players avoid injury to themselves or their opponents—no man can witness this fast and exciting sport without his blood beginning to leap and dance and shout in his veins.

In Canada the exuberant enthusiasms that attend genuine love of sport are fostered by the keen local patriotism which animates the citizens of every town. The inhabitants of a given town, high and low, rich and poor, young and old—all are equally proud of the place they dwell in. They extol its real and vaunt its imagined advantages with an energy that never slackens. The people strive their hardest to make the merits of the district which they have chosen known far and wide.

They advertise their town, they "boost" its advantages, they attract citizens by all the devices and by every means they are able to compass. They constitute themselves into 10,000 clubs, 20,000 clubs, 50,000 clubs, and labour might and main to augment the population up to the limit indicated in the title of the club.

And yet the Canadian is the very reverse of a stick-in-the-mud. He does not as a rule strike root very deeply, or, at all events, permanently, in any one place. Far fitter would it be to describe him as a bird of passage, or, if the transition be not too abrupt, as a rolling stone. In this case, however, it is a rolling stone that does gather the moss. Occasionally the moss drops off altogether, leaving the stone as bare as it was before it began its peregrinations; but as soon as it begins to roll again the moss begins to cling anew.

As might presumably be expected of a young people subduing a new country, there is in the Canadian temperament an admirable spirit of wonder. Their admiration is readily excited and ever prompt to respond to true solicitation. "My, but it's dandy!" "Ain't it cute?" "Why, sure, that's the elegantest thing I have seen!" are phrases which easily spring to their lips. I have even heard the paradoxical exclamation, "Ain't it a terror?" applied to signify the acme of admiration. Such impetuosity and sincerity of feeling are refreshing after the curbed and chilled lip-praising of the older civilisations.

Last, but not least, a trait which strikes the immigrant Englishman as being predominant in the character of the Canadian is the genuine leaven of his democratic feeling. There is a marked absence of official uniforms, a negation of outward ceremony, an indifference to mere authority, coupled with a deep-rooted, wide-reaching, sense of equality, man with man, which imparts a quickened feeling of freedom, and makes real and vital the consciousness of liberty, that liberty which is beginning to burn feebly under the legislative restrictions and fetters imposed in ever-increasing complexity and multiplicity by the States of Europe.

CHAPTER XVII.

Ranching Successes.

My colonial career has by no means been an uninterrupted series of stumbles, mistakes, and failures, as perhaps this narrative would make it almost exclusively appear. In our progress there have been several bright and happy results. Many of these are intangible, as difficult to fix in the form of precise description as are the rains which water the earth or the sunshine which ripens and colours the fruit. But elusive though some of them be, others do admit of being recorded in a form which every reader can appreciate.

One measure of success, which was vouchsafed before we were six months resident in the country, was a success for which we may reasonably claim a degree of personal merit. I mean the prizes we won for flowers and vegetables at the Nelson Fruit Fair in September, 1907. Nevertheless, that achievement would have been impossible had not the soil of Bonnington and the climate of the Kootenays so admirably seconded our efforts. Six first prizes and three second prizes out of ten exhibits as the result of five months' work—that was success No. 1.

Success number two was won two months later, in England. This is how the "Daily News" of Nelson recorded the event: "The silver Knightian medal awarded by the Royal Horticultural Society to the Nelson Fruit Growers' Association on November 26 last, at the show in London, has just been received. The apples were sent by James Johnstone, J. J. Campbell, J. T. Bealby, and C. G. Broadwood. The Cox's Orange Pippins in the display were said to have been the finest exhibited in London, and 26s. per box was offered for them."

Our third success was gained in June-July of the following year, at the Dominion Fair held at Calgary, in Alberta, on the other side of the Rocky Mountains. To that fair I contributed, amongst other things, a few boxes of Hothouse Tomatoes and a few dozen Hothouse Cucumbers. The former were stated, in more than one organ of public opinion, to be the best in the show. They did not gain any prize, because no prize was awarded for such exhibits. As for the cucumbers, they seem to have excited an unwarranted amount of attention. Many visitors, whose experience of fruit of that kind was limited to the short, sturdy Spine Cucumbers, which are grown extensively out of doors in certain parts of America, could hardly credit that our cucumbers, over a foot long, straight as a ruler, and destitute of spines, could be real. One old lady refused to accept the statement that they were *not* made of wax until one was snapped in half and the "pearling juice drops" were exhibited for her conviction!

Success number four was won at the Nelson Fruit Fair of 1908. On that occasion I staged various products—flowers, fruit, and vegetables, and though my proportion of wins was not so high, the total number was higher than the year before—namely, thirteen. One week earlier I took a collection of fruit to Kaslo, and from there I brought home no less than twenty-two prizes, including what might, perhaps, be regarded as one of the blue ribbons of the fair, the first for Gravenstein apples, a variety which Kaslo has made peculiarly her own. That counts, then, as success number five.

In connection with the Nelson show I ought, perhaps, to add that a display which we made of ferns and begonias drew from Earl Grey, the Governor-General of the Dominion, a word of praise, which he expressed to me personally.

But the greatest triumph of all, along the lines of special success that I am chronicling, came in December, 1908. On the days December 7-12 was held the largest and undoubtedly also the most important apple show ever held in any country. This was at Spokane, in the neighbouring State of Washington. The prize money awarded reached a total of $35,000 (£7,000), and individual prizes ran up to as high as $100 (£20) in several cases, $500 (£100) in at least two cases, and $1,000 (£200) for the biggest exhibit in the show—namely, a whole carload (10 tons) of packed apples. In addition, no fewer than twelve fruit farms, ranging in area from two acres to eight acres, were awarded to successful competitors with divers exhibits. The total amount of apples put into competition reached close upon forty tons, the number of separate exhibits being no less than 15,000. The competitors embraced very many of the principal expert growers of the United States—men who stand in the very front of their profession the world over—and included also exhibitors from England, Germany, and Norway.

At this great show I had the temerity to put up one special exhibit, for the "Best Plate Collection of Apples Grown by any Individual," and about a score of separate varieties staged five fruits of each variety on a plate. In the special exhibit, despite the fact that I was minus all my early varieties, having sold them before making up my mind to exhibit, I was placed second. With the score of separate plate exhibits I was fortunate enough to win eleven prizes—not all of them, of

course, first prizes. In fact, they were distributed as follows—two first prizes, four second prizes, one third, two fourth, and two fifth. Now, surely to win even a fifth prize at such a show, and against such competitors, is a feather in the cap of a beginner! This success came at the end of my first twelvemonth as an actual fruit-grower, a twelvemonth in which (as will be abundantly evident by inference from the foregoing narrative) my energies had been, of necessity, not given undividedly to the growing of apples.

EXHIBITION FRUIT.

CHAPTER XVIII.

APPLES—VARIETIES, PACKING.

Although cherries and strawberries yield excellent returns in the Kootenays, the mainstay of the fruit-grower in that district, and, indeed, in every district of British Columbia, is of necessity the apple. Neither the cherry nor the strawberry will keep; both must be sold as soon as they are ripe, and there is a limit to the distance to which either will travel. This is not the case with the apple. Even as regards the early varieties of the apple, there is a certain latitude in selecting the time to put the fruit on the market. It need not be sold the very day after it is taken off the tree. But, apart from these varieties (of which no sensible grower will plant any large number), the later varieties, and especially the winter varieties, can be kept for periods varying from four to some thirty weeks, affording ample opportunity to seize the most favourable moment for putting the fruit on the market. Speaking generally, the travelling capacity of the winter apple, at all events of certain varieties of winter apple, has been abundantly demonstrated. British Columbia apples travel to England, a journey of over 5,000 miles, and even to Australia. The Spitzenbergs and Yellow Newtown Pippins of the American States of Oregon and Washington find their best markets in New York, London, Glasgow, and Liverpool, and it is not until after Christmas that they begin their long journey. How well these varieties keep is proved by the fact that the shipping season for them lasts from February until the end of May.

The following facts go to show the exceptional keeping qualities of the Kootenay apples. At the Nelson Fruit Fair, in September, 1907, two plates of McIntosh Red apples were shown which were plucked eleven months before, and had been kept in an ordinary cellar underneath the house of Mr. J. W. Holmes, of Nelson. They were in very fair condition. In April, 1909, Mr. R. W. Hulbert, of Nelson, reported to me that he had just opened a box of Ribston Pippins, and, with the exception of one single apple, the contents of the box were perfectly sound and good. In June, 1909, Mr. Alexander Milton, of Crawford Bay (Kootenay Lake), stated in the "Daily News" of Nelson that he had kept until that date Ontario apples gathered in the autumn of 1907, and had consequently preserved them nearly twenty months! These apples were kept in an ordinary frost-proof root cellar. Mr. Milton has kept Wealthy apples until June and Yellow Transparent apples until January. Northern Spy apples will keep perfectly sound for a full twelvemonth. Now, the Ribston, the McIntosh Red, and the Wealthy are what would be called in England mid-season varieties, which do not, as a rule, keep much beyond Christmas. Yellow Transparent is the earliest apple to ripen in the Kootenays, and is not ordinarily supposed to keep at all. The Ontario and the Northern Spy are the only winter varieties amongst those just mentioned.

But, perhaps, an even more wonderful instance of the remarkable keeping qualities of Kootenay apples is this. The author, at the time of correcting the proofs of this book (July) had in his cellar Baldwin, Canada Red, and Grimes' Golden apples, which had all been frozen as hard as stones in the preceding January. The Baldwins and the Canada Reds were perfectly sound and firm, and of good flavour. The Grimes' Golden, whilst in very fair condition, had lost their flavour. All three are winter varieties.

The principal markets for British Columbia apples are at present the home markets and the prairies of the North-West. The orchards in the province are as yet young, and the output does not amount to any great quantity in the aggregate. Shipments, however, have been made to England, and in the year 1908 to Australia. The unit of over-seas shipping is the car-load (630 boxes of 40 lbs. each), and except from the Grand Forks and Okanagan districts, there would be some difficulty in getting together a car-load of apples of one variety from any single district. But this drawback will be gradually removed as time goes on. There appears to be a decided preference for a car-load to consist of one variety only. Why this should be, I fail to perceive; that is to say, I am not convinced that there is any inherent reason for it, beyond the fixed idea of the wholesale buyer. From the growers' point of view, it is always easier to make up a car-load of two or three varieties, though they must, of course, be all mid-season varieties or all winter varieties. And provided the varieties which are sold together are of the same rank in point of quality, it is difficult to see what can be the real objection to "shipping" them together.

This subject of varieties is one of the greatest importance. The problems it involves will face the fruit grower at the very threshold of his career. As soon as he gets an acre or two of land cleared, he will naturally want to plant. Then arises the question, What shall he plant? Shall he specialise, and plant one kind of fruit only, as the peach, the apple, the cherry, the prune? Shall he plant a great number of varieties of that one kind, so as to be certain of having a crop, no matter how the season comes, or shall he confine himself to one variety only? Shall he plant three, four, five, or six well-tried varieties? The fruit growers of Oregon and Washington, who stand in the forefront as scientific "orchardists," have in many cases

specialised, and confine themselves to one kind of fruit, and when they have planted apples, have not planted more than two, three, or four varieties.

FRUIT PACKED READY FOR SHIPMENT.

Well, let us just see what are the postulates which should weigh with the man who is beginning to plant. In the first place, what market does he intend to grow for? Obviously, whichever market he selects, he must grow varieties which that market wants. The taste or fashion of the parties is different from the taste or fashion in Great Britain. In considering this question, there is one factor which fruit growers in America appear to forget. Fashion or taste in apples changes, as does fashion or taste in other things. For instance, in the days of our grandfathers in England, the queen of apples was the Ribston Pippin; now there would seem to be two rivals for the pre-eminence from which the Ribston has been deposed, namely, Cox's Orange Pippin and the Yellow Newtown Pippin, and in certain parts of England a culinary apple, Bramley's Seedling, is at the present time being planted in scores of acres. On the prairies, again, the prime favourite is the Northern Spy. In Ontario people swear by the Fameuse, or Snow Apple, and the Baldwin is everywhere a favourite. Ben Davis, a quondam favourite in many parts of Canada, has now fallen into disrepute. In the United States, while New York prefers the Spitzenberg, Chicago likes the Jonathan. All this goes to show that it is not wise to pin one's faith exclusively to any one variety of apple. And for this conclusion there is yet another convincing reason. Taking the fruit seasons one with another, it would be folly to pretend that all seasons alike are equally suitable to all varieties of apple. It is well established that while one season is more particularly favourable for one variety, another season is more particularly favourable for another variety. Hence, on this ground alone, prudence dictates that a man should plant at least two varieties, and probably the greater wisdom would recommend the planting of three, perhaps four, varieties. That is to say, three or four varieties for the main crop and chief reliance for an income. For even though this policy is followed, of restricting the number of main varieties, there is no valid reason why a few trees of other varieties should not be planted. Indeed, something of the sort will be imperatively demanded if the varieties selected for the main crops are such as do not fertilise their blossoms themselves. In that case, the orchardist *must* plant a certain proportion of trees of varieties which will help to pollenise the blossoms of his main-crop varieties.

The first point to decide, then, is this. Shall I plant for the British market, or shall I plant for the prairies? In the former case, the selection must be made from what are essentially winter apples, as winter apples are not only the best keepers, but also the best travellers. In the latter case, mid-season varieties compete with the winter varieties for our choice.

Before we go further, there is yet another important consideration which must not be overlooked. We ought to bear in mind the fact that, while one district is specially suited to produce one kind of fruit, as grapes, or peaches, or apples, in better quality or greater abundance than another district, so one district may, in consequence of its natural advantages, be better fitted to produce a particular variety of apple, while a second district will excel in a second variety, and a third district be pre-eminent in a third. Now, while this fact is one of very great importance in the abstract, on the field of actual practice it cannot, unfortunately, as yet play any great or decisive part in British Columbia. The orchards in this province are not yet old enough to have told us with any degree of certainty what varieties grow best in particular districts. All that can be affirmed with safety is that certain varieties grow well and satisfactorily in such and such a district. For instance, the growers of Oregon and Washington and the North-West generally have satisfied themselves that the most profitable varieties for them to plant are the Esopus Spitzenberg and Yellow Newtown Pippin; but their experience does not admit of being adopted straightaway in British Columbia. Neither of these varieties has been sufficiently tested in the latter region. The Kootenays, for example, ripen their apples later than the famous Hood River, in Oregon, ripens its apples of the same variety. It is not yet proved that the Esopus Spitzenberg and the Yellow

Newtown Pippin will ripen early enough in the comparatively late season of the Kootenays to make it profitable to grow them there, although one experienced grower declares that the Spitzenberg does succeed well in West Kootenay. A wait of four or five years will, in all probability, give us just the information that we at present lack. There are trees of the varieties named now growing up, and when they reach the bearing stage this question will be answered.

Under the circumstances, at present we cannot safely do more than enumerate the varieties which we know to grow well, leaving the question of superiority among them to be determined later. What, then, are these varieties?

The Department of Agriculture of British Columbia answered this question in 1906, in Bulletin No. 20, entitled, "Varieties of Fruit Recommended." The introductory paragraph of this pamphlet runs thus: "This list is published, as experience has shown that the varieties named may generally be safely grown for commercial purposes, and to put intending orchardists on their guard against recommendations of tree agents and of others who have not the means of obtaining reliable information. It must be understood, however, that the list does not contain the names of all varieties which possibly may be safely, and probably in many cases profitably, grown. For commercial purposes a great variety of each kind of fruit is not recommended. It is better to profit by experience, and plant only those varieties which are known to be profitable. In apples one or two, and at the outside three, varieties of known suitability and excellence, and good money-makers, are quite sufficient for any district."

The list of varieties is as follows:—

Late Summer.—Yellow Transparent, Red Astrakhan.

Early Fall.—Duchess of Oldenburg, Gravenstein.

Later.—Wealthy, McIntosh Red, Cox's Orange Pippin, King of Tompkins County.

Latest.—Jonathan, Wagner, Spitzenberg, Red Cheek Pippin, Rome Beauty, Northern Spy, York Imperial, Yellow Newtown Pippin.

Now, I will say that, as far as my own experience goes, the best sellers among the above are Duchess of Oldenburg, Gravenstein, Wealthy, McIntosh Red, Jonathan, and Northern Spy. I have found the following equally good sellers:—Ribston Pippin, Golden Russet, and Baldwin. Ribston Pippin is now practically superseded by Cox's Orange Pippin. Provided only that they will ripen sufficiently in the Kootenays, then Spitzenberg (Esopus) and Yellow Newtown Pippin might be added to those which I have named as the best varieties for selling. A trained fruit grower who has been engaged in orchard work in the Kootenays for ten years has compiled a list of thoroughly choice varieties which do succeed in that district. They are Yellow Transparent, Red Astrakhan, Wealthy, Gravenstein, McIntosh Red, Spitzenberg, Jonathan, Wagner, and Rome Beauty. As good commercial varieties, the following have been recommended by a grower of considerable experience in the State of Oregon:—Winesap (not Stayman Winesap), Red Cheek Pippin, Cox's Orange Pippin, Yellow Newtown, Rome Beauty, Northern Spy, Wagner, and Jonathan. To these other authorities, equally entitled to attention, would add Delicious and Fameuse or Snow. Taking all these recommendations into account, we get a revised table as follows, every variety in which is a good commercial variety; but of these varieties, only those printed in italics have been sufficiently tested in the Kootenays:—

Early.—Yellow Transparent, *Duchess of Oldenburg*.

Mid-Season.—Gravenstein, *Wealthy*, Snow or Fameuse, *McIntosh Red*, *Cox's Orange Pippin*.

Winter.—Jonathan, *Spitzenberg*, Yellow Newtown Pippin, Red Cheek Pippin, *Rome Beauty*, *Northern Spy*, *Baldwin*, *Wagner*, Delicious, Winesap.

Now, this list may be still further curtailed. Of the two "early" varieties one only need be planted, so that the other becomes superfluous, and neither should be planted in large numbers. For main crop varieties, both these, therefore, may be disregarded. Of the mid-season varieties, the most desirable is, beyond question, Cox's Orange Pippin, and of the other four, unquestionably the finest in point of flavour is McIntosh Red. It also yields heavily, besides being a very handsome, dark-red apple, with a heavy whitish bloom. Both Gravenstein and Wealthy, again, are of first-rate quality and good bearers; but, being comparatively early, they will not travel far, and in the Kootenays they have been planted, perhaps, in excess. In the list of winter varieties, neither Wagner nor Baldwin is the equal in point of quality of the rest of the varieties named; but both sell well, and Wagner is useful as a "filler"—that is, to fill up the spaces between the

main crop varieties during the early stages of their growth. Delicious is comparatively new, and it has scarcely found its proper place in the market, although, perhaps because it is still scarce, it fetches high prices. Accepting these statements, and remembering that only certain of the varieties in the list have been properly tested in the Kootenays, it would appear that the best apples for planting are Cox's Orange Pippin, McIntosh Red, Jonathan, Spitzenberg, Yellow Newtown Pippin, Rome Beauty, and Northern Spy. All the same, the fruit grower who should plant any of those enumerated in the last-printed table, on p. 153, would not make any serious mistake, taking care, of course, to have a proper proportion between mid-season and winter varieties.

All apples in British Columbia, irrespectively of the variety and irrespectively of the size, are packed into a box of uniform dimensions—namely, 20in. long, 11in. wide, 10in. deep; and on one end of each box the law imperatively demands that the grower or packer shall place his name and postal address, the name of the variety, the grade, and the number of tiers of apples, counting from the bottom upwards. A box of these dimensions, no matter how large or how small the apples packed into it, will almost invariably weigh 40lbs. As the different varieties differ greatly in size, the methods of arranging them in the box differ in corresponding ways. A considerable amount of skill, or, at all events, practice, is required to pack a box of apples well. The objects aimed at are to have the box full, to make it attractive in appearance when opened, to place the apples in such a way that they will not move in transit (if they move they will almost certainly bruise), to see that all the apples which go into one box are as nearly as possible of the same size, and to be sure that each apple is free from bruises, disease marks, and insect or fungoid defects.

Consequently, the first requisite for good packing is that the apples should be graded—sorted into suitable sizes. This can be done most conveniently while they are being picked, especially if the quantity is not great. Indoors, in the packing house, the tables should be so arranged that the packers can pack apples of two (or three) sizes or grades simultaneously, and this they can do if the culls, or small fruits, are put on one side by themselves in the orchard as they are gathered. If the crop has been well and properly thinned at the right time, there should not be very many culls to put on one side. Thinning, therefore, is a most important operation. To take off deliberately, and in cold blood, one-half or two-thirds of one's crop, is a proceeding which goes against the grain, and in the case of the beginner requires no ordinary courage. Yet hardly anything pays so well as thorough and judicious thinning. Which is better, to gather five boxes off one tree, each box containing 68 or 72 or 84 apples, to be sold for $2 per box, or eight boxes, out of which you have four boxes of culls that will not sell at all, except to the jam factory at 25 cents a box, and four other boxes running over 200 apples to the box, and making when sold only $1.50 per box? Thinning invariably adds to the *total* weight of the crop, instead of diminishing it; the apples have a much finer appearance, make a better price, and bring the customer back another year.

The first requisite for a good apple-packer is a keen, quick eye, so that he can tell at a glance, before he picks up a specimen, which apple will fit into the next space he desires to fill in the box. This saves not only time, but unnecessary handling of the fruit. The second requisite is quickness of handling. For one man to pack a car-load would keep him employed over a month; it takes a quick and clever packer to pack more than twenty boxes in a day of normal length. The car-load of apples, consisting of 630 boxes, which won the most important prize ($1,000—£200) at the great Spokane Apple Show in December, 1908, was packed by one man, of course an expert, and the operation kept him occupied for the space of two months. He was deliberately packing for exhibition, and naturally speed was not a matter of moment. His average rate of packing was ten boxes a day.

YOUNG APPLE ORCHARD, KOOTENAY.

The apple-packers of the Hood River Valley, in the State of Oregon, acting under the strict regulations of the Hood River Apple Growers' Union, have brought their art to such a pitch of perfection, and work on such a standard of integrity, that

thousands of boxes of Hood River apples are bought by wholesale houses in New York and other large Eastern American cities without their ever seeing or examining a single box, or even a single apple. "The Hood River organization now controls approximately 90 per cent. of the fruit of the valley. In four years it has been able to raise the price from 85 cents (1s. 10½d.) to $3.15 (13s. 1½d.) for the best grade of Spitzenbergs, and $2.50 (10s. 5d.) for the best Yellow Newtowns. . . . . As an experiment, this past fall [1907] the association sent nine car-loads of fall apples to England. . . . . After all expenses were paid they netted the Hood River growers $1.32 (5s. 6d.) per box."

These results are achieved by maintaining an inflexible and undeviating honesty in the packing: the contents of the box answer strictly and without exception to the description (grade, tier, etc.) on the outside, and every apple is as near as possible perfect.

As a further illustration of the value of an unimpeachable commercial reputation, combined with the enhanced value due to novelty of variety, I may quote the following paragraph from the journal *Better Fruit* (October, 1907, p. 36), the semi-official organ of the Hood River Apple Growers' Union:—

"The highest price ever known to be obtained for apples was received by Oscar Vanderbilt, a Hood River grower, recently, who sold forty boxes of the Winter Banana variety at $8 (£1 13s. 4d.) per box (40lbs.—10d. per lb.). The fruit was bought by Seeley, Mason and Co., of Portland, who disposed of it the next day to New York parties for the fabulous sum of $12 (£2 10s.) per box (1s. 3d. per lb.)."

The winner of the above-mentioned car-load of apples at the Spokane Apple Show sold 150 boxes of the exhibit at $10 (£2 1s. 8d.) per box to Mr. James J. Hill, Chairman of the Board of Directors of the (American) Great Northern Railway Company, and his son, Louis W. Hill. The remainder of the car-load, 480 boxes, were sold to Messrs. D. Crossley and Sons, of Liverpool, England, for approximately $4,000 (£800). The varieties were Jonathan, Winesap, and Spitzenberg.

With the above may be compared the price of twenty-six shillings offered for the Cox's Orange Pippins sent by the Nelson Fruit Growers' Association to the Colonial Exhibition in London in November, 1907. The Winter Banana is a novelty, and as yet scarce. When it has been grown as long as Cox's Orange Pippin, and is as plentiful, will *it* too fetch twenty-six shillings the box?

CHAPTER XIX.

Making an Orchard.

The most suitable time for the fruit grower to arrive in British Columbia is, I should judge, early in April, though some authorities recommend him to aim at reaching his destination towards the autumn. Arriving at the earlier period, he has a longer time in which to look about him and select the locality which appeals most strongly to his judgment.

Among the factors which make principally for success in the production of the choice fruits of the Kootenays are the soil and the climate, pre-eminently, perhaps, the climate. That subject has been already touched upon in Chapter V. As regards the soil, it may be stated summarily that fruit trees appear to grow and thrive in nearly all kinds of soil. The prevalent soil occurring, I believe, in all parts of the Kootenays is a rich but light silty loam, of a reddish colour, friable and easily worked, and the subsoil is generally clay. The principal defect of this soil, the tendency to dry quickly, is met by growing and ploughing in clover or some equivalent leguminous crop, and by the application of farmyard manure, where procurable. Large fruit trees do not, as a rule, suffer from this property of the soil—insufficient retention of moisture; they find the requisite moisture in the "seepage," or subsoil irrigation, which goes on all summer down the mountain sides. Hence the value of planting an orchard on a slope. In the case of young fruit trees, mulching either with finely pulverised, well cultivated natural surface soil, or with farmyard manure, or some cover crop, is a fairly effective substitute for "seepage" irrigation. At Bonnington, in default of anything better, we mulched our young, newly-planted trees with the foliage of the wild salmon-berry, a few stones being placed on the leaves to prevent them from being blown away. The expedient served its purpose perfectly.

As regards the situation, practically the same remarks apply: orchards appear to thrive and grow well in any aspect. Mr. J. R. Anderson, late Deputy-Minister of Agriculture for the Province of British Columbia, in Bulletin No. 12, entitled "Information for Fruit Growers," and dated August 28th, 1905, says (p. 3): "Experience has shown that eastern and southern exposures are not well adapted for orchards, such exposures tending to promote early growth, and in the case of late frosts the influence of the early morning sun acting injuriously on the trees. A north-western exposure, other conditions being favourable, is, I believe, the ideal site for an orchard in British Columbia. On such an exposure the unduly early growth is retarded, the influence of the early morning sun is minimised, and the full effect of the afternoon sun, at the season when it is of the greatest utility, is secured. An excellent plan to retard the growth of trees, in those parts where the ground gets sufficiently frozen in winter, is to mulch the trees whilst the ground is frozen. . . . . This serves to keep the ground frozen and consequently cold about the roots, and prevents the sap rising too soon."

GROUND FOR A FRUIT RANCH, PARTLY CLEARED, KOOTENAY DISTRICT.

With Mr. Anderson's preference for a north-western aspect nobody would quarrel; but, as all fruit ranches cannot face in that direction, it will be useful to know what other aspects may be chosen. And here it may be stated, as the result of actual observation on the ranches along the shores of Lake Kootenay, that they may, and do, face north, east, west, south, and south-east, as well as north-west, without any injurious effects following from spring or fall frosts. One of the most prominent growers in the vicinity of Nelson, whose ranch faces south-east, has publicly said, "During my seven years' experience here I have never suffered the slightest injury to plums, peaches, or cherries from spring or fall frosts"; and, so far as I know, no lake-front rancher, whatever the aspect and situation of his ranch, has suffered injury or loss from

late spring frosts. During the January of the present year (1909), when there occurred the coldest spell and severest frost ever experienced in the history of Nelson, the thermometer descending thirteen degrees below the previous minimum, or to -19 deg. Fahr., young peach trees, standing on a northward slope, and consequently exposed to the keenest blizzard that has visited the district within the memory of man, suffered no serious injury. I may add that I myself have seen and examined the trees in question. Thus a frost of 19 deg. below zero proved to be innocuous to even tender fruit trees. From this it is not unreasonable to infer that fruit trees will succeed in almost any situation and aspect, provided only they can command the advantage of sheltering mountains, and that, with proper precautions observed, the risk of loss or injury from spring or autumn frosts is very slight.

For suitable land, enjoying favourable facilities for transportation, the incoming fruit grower must make up his mind that he will, under existing conditions, have to pay about $100 (£20) per acre, and that will be for uncleared, unimproved fruit land. Improved or partly cultivated land will cost at the rate of $200 (£40) per acre and upwards. Apples and cherries thrive well on high land with a good slope, pears and plums succeed on lower and moister soils; but in all cases thorough drainage is indispensable. Light, peaty soil suits no kind of fruit. For apples, cherries, and peaches, it is better to avoid the low bottom land, generally black in colour, in the floor of the valleys. Fir-covered slopes are to be preferred, or, in other words, it is wiser to plant apples, cherries, and peaches on what is known as bench land, or the higher slopes at the sides of the valleys. If the fruit grower buys bottom land, he will have to incur the additional expense of drainage, for fruit trees absolutely will not thrive on land that is in any degree water-logged. I have myself witnessed the cutting down and grubbing up of a plantation of plum trees in this province of British Columbia on the cogent plea that for years in succession they had yielded a continuously diminishing return, when as an actual fact the only thing that was amiss with the trees was that the land—flat and level—on which they were planted required to be drained.

In any case, whether the fruit grower buy flat bottom land or higher bench land, he will have to face the cost of clearing, for no matter where you go in the Kootenays, you will find trees on the land. The cost of clearing will range generally from $35 per acre upwards, according to the density of the forest growth. If he buys twenty acres, or even ten acres, he will not (unless he can command a larger capital than the average) proceed to clear more than four or five acres in the first year. The steps necessary for successful clearing have been already described in Chapter VIII.

But in addition to clearing (and possibly draining), he may have to cope with boulders and scattered rocks. Loose small stones littered over the surface are an objection, because of the expense of taking them off; but very often the soil underneath leaves nothing to be desired in point of quality. In fact, the best piece of land we used at Bonnington Falls was the half-acre or so from which we picked off the stones in odd half-hours. Large boulders are not, perhaps, a really serious drawback, except in so far as they interfere with ground cultivation; and this interference is reduced to a minimum if among the boulders the rancher plants his cherry trees, for the less the soil is disturbed about the roots of the cherry, the better the tree will thrive, weeds, of course, being kept down and scrub not allowed to grow. Large stones or boulders lying on a slope always conserve a certain amount of moisture underneath them, and this moisture the roots of the cherries or other fruit trees will unfailingly find out and utilise as soon as the trees are big enough. The illustration, "A Successful Orchard Among the Stones" will demonstrate clearly that I am making no exaggerated or misleading statements. The orchard which is shown in the illustration is famous for its cherry trees. In one corner there is a solid block of them, and when they are in blossom they make a picture that is worth travelling a long way to see.

Having thoroughly cleared the land of trees, scrub (chiefly by burning), and stones, and ploughed and harrowed it, the next operation ought to be the sowing of a crop of clover, 12lbs. to the acre, in July or August if the ground is only moist enough—that is to say, as soon as rain falls. This crop will then be ploughed under in the following spring, and thus supply the ingredient that the virgin soil of the Kootenays principally lacks, humus—that is, decayed or disintegrated vegetable (or animal) matter. If there should be a supply of good stable manure available (which is seldom the case) it will serve the same purpose as the clover. It must be admitted, however, that the majority of planters proceed to plant without sowing clover.

Assuming that the preparation of the ground is sufficiently advanced, the fruit grower may plant his trees in the fall of his first year. Apple trees ought to be planted 30 feet apart each way; that is to say, the rows should be 30 feet from each other, and the trees also 30 feet from each other in the rows. As the young apple tree will not for some few years by any means cover all the intervening space, it is usual to plant other fruit trees in between the apple trees. The varieties chosen to fill these spaces may be the apple known as Wagner, which comes into bearing early, and will yield several useful crops before having to be cut out; also peaches, apricots, and pears. I see no reason why black and red currants, as well as gooseberries, should not be used for this purpose, gaps being left at convenient intervals to enable the rancher

to get his implements backwards and forwards. But raspberries should not be grown amongst other fruit trees, owing to the habit which their roots have of spreading underground. Raspberries should always be grown in a patch by themselves. It must be distinctly borne in mind that, whatever the fruit trees planted for fillers, these must be cut out as soon as the main crop apples require the space, though it will probably be possible to leave them for ten or twelve years. Sour, or the Morello, varieties of cherries, as well as pears, should be planted about 20 feet apart, and sweet cherries require eight to ten feet more space. Peaches, apricots, plums, and prunes may all be planted at intervals of 20 feet or so. The number of trees needed to cover an acre of ground, planting them 30 feet apart, is 50; planting 20 feet apart, it is 109. The cost of planting an acre of apple trees may be put generally at from $12½ (50s.) to $25 (£5). Pears will cost rather more; peaches and plums rather less; and cherries from $20 (£4) to $40 (£8).

The young trees will need no protection during the winter beyond what the snow affords. But in the following year they will require to be mulched during the hot, dry weather. The best method is cultivation; but then it must be cultivation persistently carried on all through the summer. The object is to secure a finely pulverised tilth, or even dust, on the surface. Mr. L. H. Bailey, one of the most esteemed authorities on garden and orchard cultivation in the United States, says: "A finely divided, mellow, friable soil is more productive than a hard and lumpy one of the same chemical composition, because it holds and retains more moisture, holds more air, presents greater surface to the roots, promotes nitrification [the absorption by roots of trees of the nitrogen contained in decayed vegetable matter incorporated with the soil], hastens the decomposition of the mineral elements, has less variable extremes of temperature, allows a better root hold to the plant. In all these ways and others the mellowness of the soil renders the plant food more available, and affords a congenial and comfortable place in which the plant may grow."

Between the young fruit trees potatoes or other root crops, as well as almost any kind of vegetables, may be grown with advantage as well as profit, and these crops may be continued every year for a few years, but for a few years only. As soon as the trees begin to send out their roots to any distance, and the foliage begins to shade the land, the practice of growing supplementary crops between the rows of fruit trees must be discontinued. Grasses and grains should on no account be grown between the fruit trees, even in the very youngest stages of the orchard's life.

Young fruit trees will not require to be pruned until at least one year after planting. But from that time onwards they will need to be pruned every spring in order to give the right shape to the tree and promote wood growth, so as to build it up with a well-balanced, symmetrical head, open to wind and sun, and with the branches not too crowded. When the tree reaches five years or so, summer pruning is recommended in place of winter, or rather spring, pruning, in order to develop fruit buds instead of wood growth. The rule is: Winter pruning for wood growth, and summer pruning for fruit growth. Fruit buds will, of course, form, even though there is no summer pruning. They form independently of winter pruning; but summer pruning is believed to promote their formation. This question of summer *versus* winter pruning is one of considerable intricacy and difficulty. Even experts are not fully agreed as to the actual effects produced in the case of either. The difference between the two, although it appears to be pretty well established, is still to a large extent a matter of theoretical discussion. But it will be a few years before the planter of a young orchard will have any need to face the problems involved in this stage of orchard work, and by that time he will no doubt have gathered sufficient information on the subject to enable him to form his own opinion.

The following sound and valuable advice was offered by a prominent fruit grower in the State of Washington in a paper read before the Washington Horticultural Society at Seattle, and reproduced in Bulletin No. 14 (1905) of the Department of Agriculture of British Columbia, on the "Care and Management of Orchards" (pp. 10-11):—

"The first year after setting, head the shoots back from eight to twelve inches, according to the vigour of the growth, those least vigorous to be shortened in the most. Exercise the same care in reference to the terminal bud and manner of cut as before [the cut should be made close to a bud, and should be slightly diagonal, sloping downwards away from the bud]. Care and judgment must be exercised in selecting the position of the bud. If straight shoots are desired, cut to inside buds for trees of a spreading character, like the Greening; or for compact growers like the Northern Spy, cut to outside buds. It is best to cut outside buds on the side next the wind, in order to throw the growth toward the wind, and sometimes, on the opposite side of the same tree, it will be necessary to cut inside buds to maintain an evenly-balanced top. [This advice has no force in the Kootenays, where there is as a rule very little wind.]

"The second year from planting the previous season's growth should be headed back to about twenty inches, the less vigorous to be pruned the most. Keep the length of the cut [on the different branches] as nearly even as possible, varying, of course, to suit the buds that come in the desired positions.

"Remove all cross branches and those having a tendency to grow towards the centre of the tree, except the fruit spurs. These should not be removed even from the first year's growth. The fruit spurs are thrown out straight from the trees, and look like thorns, or the growth on seedlings. The mistake is often made of removing these, and in consequence leaving long, bare poles.

SPRAYING A FRUIT-TREE.

"The third year from planting shorten back to from two to three feet of previous year's growth. This pruning applies to apples, pears, and the plum family. Cherry trees should be dropped from the list [of trees to be pruned] the first. This is the last of the shortening in on these varieties. With this, the fourth season's growth, the head will be formed, if all has gone well, and with the exception of an occasional refractory branch, which should be shortened in, will not need to be touched.

"The tree is now ready for fruiting. Commencing in June, pinch prune [*i.e.*, prune by pinching with the thumb and finger], removing all superfluous growth, and keep the head symmetrical. This pruning in during June will have a tendency to throw the tree into fruiting. Keep off all straggling branches that have a tendency to grow toward the ground. The tree is now in shape; pinching in will keep it there. Ingrowing branches can be nipped in the bud.

"Peaches and apricots should be treated from the start as the apple and plum family, but should be shortened in about half the season's growth each year. The shortening in process should not be done indiscriminately; they should be cut back to a good bud or fork, or else the tree will soon thicken up with an undesirable growth."

In the case of apples, pears, plums, cherries, and quinces, it is best to plant trees one or two years old, preferably one year old. Nothing whatever would be gained by planting trees three years old, and the risk of their dying in consequence of removal from the nursery to the orchard is very much greater than it is with the younger trees. Peaches and apricots should hardly be older than one year when planted in an orchard.

When the orchard has reached the bearing stage, another important operation becomes necessary—spraying. This is no more a simple operation than pruning is. The object of spraying is either to prevent the ravages of insect and fungus enemies of the fruit tree or to destroy the insect or fungoid pest. The process is carried out both in summer, when the trees are in leaf, and in winter, when the vegetative activities are dormant, the former chiefly to combat insect pests, the latter directed principally against fungoid nuisances. The most efficacious agent employed against the attacks of insects is a mixture of lime, sulphur, and salt, applied hot, in the spring, immediately the pruning is finished, and before the leaf buds begin to open. For preventing or curing the attack of fungoid diseases, the remedy usually employed is Bordeaux mixture (lime and bluestone—*i.e.*, sulphate of lead). For fighting insects when the trees are in leaf, various agents are had recourse to, according as the pest specially to be combated sucks the juices of the tree, eats its leaves, or bores into its substance or its roots. Whale-oil soap, quassia chips, kerosene, arsenate of lead, and Paris green (arsenic), besides other remedies, are employed in various mixtures, and at various periods of the summer. Full information with regard to these matters can be obtained from a pamphlet entitled "Orchard Cleansing—Remedies for Insect Pests and Diseases," issued in April, 1907, by the Provincial Inspector of Fruit Pests for British Columbia.

CHAPTER XX.

Some Results.

When the attention of a man in England or Scotland is seriously arrested by the highly favourable accounts he hears of fruit growing in British Columbia, he naturally begins to make inquiries. The information he gleans will be similar to that which I have repeated in Chapters III. and IV. If he is able to do so, he will make it his business to go to Westminster and see for himself the kind of fruit which British Columbia sends every autumn to the Colonial Fruit Exhibition organised by the Royal Horticultural Society of England. One visit will be sufficient to convince him, no matter how sceptical he may be, as to the superior qualities of that fruit, that it is, indeed, entitled to rank among the finest in the world.

When he gets out to British Columbia, and is taken to see a mountain slope, irregular in contour, thickly studded with big trees, beneath which creep tangled thickets of bushes and scrub, and observes, it may be, the big boulders scattered here and there over the surface, and is told that that is the land on which he will have to plant his orchard, it is not a matter for surprise if he should be incredulous—for a time—and question the correctness of the information which has been given to him. I say "for a time," because after he has had an opportunity to visit an orchard actually in bearing, and has witnessed the cherry trees in bloom, the plum trees with the fruit hanging on them as thick as ropes of onions, the pear trees trailing their branches on the ground through sheer inability to hold up their load of fruit, even after they have been thinned, and has studied the apples colouring day after day under the bright autumn sunshine—well, how can he be sceptical after that?

I will confess that I, too, had my hour of unbelief. I saw, admired, and was tempted by the gloriously-coloured, beautifully-graded, splendidly-packed fruit exhibited by the Provincial Government of British Columbia at Westminster. I had already become interested in the Nelson district of the Kootenays, and, in consequence, paid particular attention to two collections of apples sent from that locality. The first thing I did after reaching Nelson was to pay a visit to each of the ranches on which those collections of apples were grown. I candidly acknowledge that I was disappointed in both. Yet, after I became better acquainted with the country, disappointment so far wore away that I actually bought one of the two ranches in question, namely, Welland Ranch, on which I am at this present moment living; and, what is more, I would not now sell it for double the price I paid; and I say this notwithstanding that it is far from being all that a model fruit ranch ought to be. The facts which have brought me round to this opinion I will now proceed to state, and later to amplify.

(1) British Columbia produces some of the very finest apples grown anywhere in the world.

(2) Fruit growing can be, and is, carried on successfully as a commercial enterprise.

(3) The life is interesting, pleasant, and, after the first year or so, easy.

(4) The fruit ranch affords a satisfactory escape from the stress and strain of city life, and gives an added dignity and freedom to one's sense of individuality.

That British Columbia apples are not only superb, but supreme in their kind, is abundantly attested by the awards which they have gained before the expert tribunals of the world. Each successive year since and including 1904 they have won the gold medal of the Royal Horticultural Society of England, the highest award that Society has in its power to bestow, an award that is not by any means lavishly bestowed; in fact, nothing but real sterling merit is ever able to win it. And, it is pertinent to remember, the apples which have won this distinctive award have all travelled over 5,000 miles before being placed under the judge's eyes. The most famous apple-growing region in the United States, where orchard work is conducted on the most scientific principles, is the Hood River Valley, in the State of Oregon. Yet in December, 1907, in an open competition confined to three classes, and held at New Westminster, in which the Hood River Valley competed, British Columbia was placed first in two out of the three classes, and second in the third. For the best five boxes of apples the first prize was awarded to Mr. J. D. Honsberger, of Grand Forks, British Columbia; the second to Mr. A. I. Mason, of Hood River, Oregon; and the third to Mr. T. G. Earl, of Lytton, British Columbia. For the best display of fresh fruit, the first prize was given to the Kelowna Fruit Growers' Association, Kelowna, British Columbia; the second to Mr. James Rooke, Grand Forks, British Columbia; and the third to the Chelan County Horticultural Association, Wenatchee, Washington, U.S.A. For the best box of commercial apples, the first prize went to Mr. A. I. Mason, Hood River, Oregon; the second to Mr. E. H. Shepard, Hood River, Oregon; and the third to Mr. T. G. Earl, Lytton, British

Columbia. In these competitions British Columbia not only successfully held her own, but also beat a rival who up to that time never had been beaten when exhibiting apples in the show room.

Again, at the gigantic show of apples held at Spokane, Washington, in December, 1908, although British Columbia, as a whole, was not represented, and only a few of her districts, her growers returned laden with honours. One grower, Mr. F. R. E. de Hart, of Kelowna, won no fewer than fifteen first prizes and four seconds; while Mrs. A. J. Smith, of Spence's Bridge, gained four firsts and two seconds; Mr. James Cook, of Creston, two firsts and three seconds; Mr. J. T. Bealby, of Nelson, two firsts and five seconds; Mr. H. W. Collins, of Carson, one first and five seconds; and Mr. J. W. Cockle and Mr. J. Biddle, of Kaslo, each one first. In addition, the growers from this province won several third prizes and others of lower denomination. But to win even a fifth prize at such a show was a distinction to be proud of.

After these severe tests, the superlative excellence of British Columbia apples cannot for one moment be doubted.

The next subject for inquiry is the commercial aspects of fruit growing. Can fruit growing be made to pay? Is it possible to grow apples, and, of course, other fruit, at a profit? Can a man, after buying his land, clearing and planting it, and then waiting for his trees to grow up to the bearing stage—can he hope to make a good living out of the fruit they yield? Finally, to pass from the general to the particular, can fruit growing be carried on as a commercial success in British Columbia?

As an answer to these questions, I will first quote precise results which have actually been accomplished in the famous fruit-growing districts of the Western United States—districts in which the conditions do not differ materially from those in the fruit-growing districts of British Columbia; and finally I will add similar facts and figures gathered from various parts of British Columbia itself.

First, as regards apples. From the Wenatchee Valley, in the State of Washington, I have before me gross returns per acre ranging from $100 (£20) to $825 (£165); from the Yakima Valley, Washington, similar returns ranging from $186 (£37) to $2,288.50 (£457 10s.); from the Rogue River Valley, Oregon, from $157 (£31) to $1,143 (£229); and from Hood River, Oregon, from $567 (£113) to $1,420 (£284). One series of returns, furnished by Mr. A. D. Helm, of Rogue River, Oregon, for an orchard of seven acres, extends over a period of seven years; the average gross returns for those seven years were $589 (£118) per acre. This, I need hardly point out, is an exceptionally valuable record, partly because it is for the same piece of land, partly because of the length of time over which the records have been continuously kept.

As regards pears, the gross returns for the same four districts range between $150 (£30) and $3,806 (£761) per acre, the average being $200 (£40) to $400 (£80).

PEAR TREE.
Showing Pendulous Habit Caused by Weight of Fruit.

Cherries, principally from the Wenatchee Valley, Washington, gave fruit to the gross value of $150 (£30) to $1,120 (£224). The net returns, in two at least of the returns quoted, amounted to 75 per cent. of the gross returns. The owner of one of these orchards, containing ten acres, Mr. Enos Presnall, of Salem (Wenatchee Valley), Washington, paid $1,500 for the property in the spring of 1907, and in the summer of the same year sold off it cherries to the value of $1,700 gross, answering to $1,350 net: in one year he had a gross return greater than the original cost price of the property.

The returns from peaches grown in the Wenatchee and Yakima Valleys of Washington run at a more uniform figure, the average being $1,678 (£335) per acre.

Prunes give gross returns ranging from $88 (£18) to $328 (£66), the average being $156 (£31). These are for the Wenatchee Valley only.

Strawberries, taking returns from Hood River, Oregon, and Wenatchee, Washington, range between $115 (£23) and $350 (£70), the average being $232 (£46 10s.) per acre.

For other kinds of fruit there are returns—grapes, $700 (£140) net; raspberries, $100 to $150 (£20 to £30); gooseberries, $204 (£41); loganberries, $348 (£69 10s.); tomatoes, $400 (£80); and dewberries, $1,000 (£200) and $1,651 (£320).

Mr. Theodore S. Darby, of Yakima Valley, Washington, bought a ten-acre orchard in 1903, paying for it $4,200 (£840); in 1907 he sold off it mixed fruit to the aggregate value of $4,206 (£841), giving an average of $420 (£84) per acre. Mr. Horan, of the Wenatchee Valley, Washington, who won the principal prize of $1,000 (£200) for the best car-load of apples at the Spokane Apple Show in December, 1908, planted an orchard of 50 acres in 1900, the land being at that time worth $100 (£20) per acre. In 1908 it yielded 8,000 boxes of peaches and 7,000 boxes of pears, equivalent to an average of $440 (£88) per acre, without counting the produce of 1,340 apple trees. Probably Mr. Horan's orchard would bring him in that year $30,000 (£6,000), or an average of $600 (£120) per acre, for his winning car-load of apples was sold for a sum closely approximating $5,500 (£1,100). Mr. Horan declares that some time previous to the show he refused an offer of $2,000 (£400) per acre for his orchard.

Mr. H. M. Gilbert, of North Yakima, Washington, who won the second prize in the same competition, planted a 20-acre orchard in 1898-1901. During the last six years the peaches have yielded $1,000 (£200) per acre, and during 1908 the total yield of apples, peaches, pears, and apricots amounted to an estimate of $20,000 (£4,000), or $1,000 (£200) per acre.

The last two instances quoted are for trees ten years old, or, in other words, for orchards just beginning to bear full crops. The average price for orchard land with trees of that age is not less than $1,000 (£200) per acre, and runs up to double that amount.

British Columbia, to which I will now turn, is, it must be remembered, as a fruit-growing region, some eight years younger than the districts of Oregon and Washington, from which I have quoted. In the majority of the cases quoted for British Columbia it will be necessary to add to the returns for apples or pears or peaches the returns for a second crop, still growing between the fruit trees. In other words, in order to institute a proper comparison between Oregon and Washington, on the one hand, and British Columbia on the other, it is necessary to take two crops for the latter, such as, for instance, apples and strawberries, in so far as both crops are occupying the ground simultaneously while the apple trees are small.

First, I will quote a few returns in which apples alone are grown, without any supplementary crop. Mr. James Johnstone, of Nelson, states that he has obtained an average net profit per acre of $500-$600 (£100-£120) from his apple trees, virtually seven years old. Mr. John Hyslop, also of Nelson, obtained an average of $900 (£180) per acre from twelve-year-old trees. Mr. J. D. Honsberger, of Grand Forks, one of the successful exhibitors against the Hood River Valley at New Westminster in December, 1906, records a yield for apples averaging $300 (£60) net per acre.

Messrs. Mawdsley and Eskrigge, who have an excellent orchard at Kaslo, have kindly favoured me with the following particulars. "In 1907," they write, "we picked thirty-two boxes from about forty trees of Wealthy, at that time seven years old. In 1908, from the same trees, we harvested 118 boxes. In the year 1907 we picked twenty-four boxes of Ontarios from thirty trees, and in 1908 fifty-four. From one Fameuse tree, eight years old, we had 3¾ boxes. All these apples sold at $1.75 per box. This works out as follows: Yield of Wealthy per acre, 1907 $67 (£13 10s.) and 1908 $142 (£28 10s.); Ontarios, 1907 $67 (£13 10s.) and 1908 $151 (£30 5s.); Fameuse in 1908 $315 (£63)." "In 1907," continue Messrs. Mawdsley and Eskrigge, "we had potatoes planted between the rows of trees, with a crop of about ten tons, which we sold at an average price of $26.50 (£5 6s. 8d.)." This would be, I suppose, equivalent to a return of about $175 (£35) per acre. Adding this to the value of the apple crop, we obtain £64 as the gross return per acre of this particular Kootenay orchard.

Mr. R. W. Hulbert has kindly placed at my disposal the subjoined particulars of the yield of his orchard at Granite, two

miles west of Nelson. In 1908, twenty Ribston Pippin trees yielded four to five boxes each, which sold at $1.75 per box, equivalent to a gross return of $380 (£76) per acre; Wealthy, seven year old trees, yielded eight to ten boxes each, averaging a gross return of $540 (£108) per acre; Duchess of Oldenburg, nine year old trees, gave an average of $15 (£3) worth of fruit per tree, equivalent to $720 (£144) per acre; Northern Spy, nine year old trees, gave four boxes each, which, selling at $1.75 per box, is equal to an average of $336 (£67 5s.) per acre; Ontarios, five year old trees, yielded 1¼ boxes each, which, at the same price, works out at an average of $105 (£21) per acre; and Stark yielded eighteen to twenty boxes each, which, at $1.25 per box, comes to an average of $1,150 (£230) per acre. With regard to cherries, Mr. Hulbert states that even after losing 50 per cent. of the blossoms on the crop in 1908, there was, nevertheless, a total increase, as compared with the harvest of 1907, of 25 per cent. Mr. Hulbert's ranch is famous for its cherries, the principal varieties being Royal Windsor, Lambert, and Bing. He estimates that in 1908 the total gross value of the crop per acre was $1,400 (£280), and the total net value $900 (£180) per acre. Two trees of Royal Windsor, eight years old, gave together twenty boxes, equivalent to $12 (£2 10s.) per tree, or $840 (£168) per acre. Lambert cherries, about five years old, yielded five boxes each, which sold for $2 each, the box weighing 8lb. net. This works out at an average of $700 (£140) per acre. Plums, eight to ten years old, yielded from $7.50 to $16.50 per tree, the varieties being Imperial, Peach, Grand Duke, and Bradshaw. This is equivalent, on the basis of 120 trees to the acre, to a gross yield of the value of $900 to $1,980 (£140 to £396) per acre. The chief varieties of pears grown by Mr. Hulbert are Bartlett (Williams' Bon Chrétien), Flemish Beauty, and Kieffer's Hybrid, all the trees being seven to eight years old. The average yields in 1908 were $8 to $12 per tree; which, at seventy-two trees to the acre, gives an average of $576 to $854 (£115 to £171) per acre.

YOUNG CHERRY TREE IN BLOOM, WELLAND RANCH.

My own experience, in the cases of trees of various ages from five to ten years, all taken together in the lump, is that they give an average gross yield of $350-$400 (£70-£80) per acre, with an addition for strawberries growing among (say) one-half of them. Mr. T. W. Stirling, of Kelowna, on the Okanagan Lake, has stated his return for apples alone from a nine-year-old orchard at $150 (£30) *net*. And this is approximately the amount at which Mr. R. M. Palmer, Deputy-Minister of Agriculture for the Province of British Columbia, estimates the net annual profit per acre for an orchard nine years old, his figures being $125 (£25) to $150 (£30). In the case of one four-year-old orchard on Kootenay Lake, the gross yield in the first year of bearing amounted to an average of $75 (£15) per acre, and to this there is to be added the much more valuable crop of strawberries, which would average from $250 to $500 (£50 to £100) per acre. Another orchard of 40 acres yielded when the trees were four years old $4 (16s.) per tree, or $200 (£40) per acre, this being their first crop.

How heavily strawberries do yield in the Kootenays is proved by the statistics kept by Mr. E. I. Wigen, of Creston, near the southern end of Kootenay Lake. In a letter to me, in which he courteously places his results at my disposal, he says: "In the season of 1905 I had only 1 1/5 acre in fruiting, which brought a gross return of $1,300 (£260), or net result of $800 (£160). [This gives an average of $1,083 (£217) gross and $667 (£133) net per acre.] For the season of 1906 I had three acres in fruiting, but this being the year when the strawberry crop was a general failure all over, I only realised a gross return of $2,300 (£460), or net result of $1,200 (£240). [This gives an average of $767 (£135) gross or $400 (£80) net per acre.] In the season of 1907 I had four acres in fruiting, which brought a gross return of $4,300 (£860) or over $1,000 (£200) per acre, the net results being about $2,300 (£460), giving an average net return of $560 (£112) per acre." The season of 1908 afforded heavy yields, but prices ranged low, and the weather at the time of shipping was very unfavourable; consequently the gross value of the returns was below the average. In spite of that, Mr. Wigen sold

his crop off a little over four acres for approximately $4,200 (£840), or about $1,000 (£200) per acre.

Mr. Thomas Morley, who has had twelve years' experience of fruit growing in the immediate vicinity of the West Arm of Kootenay Lake, says: "I have known several instances where from $350 to $500 (£70 to £100) an acre has been produced from a strawberry crop the second year of planting." Mr. F. G. Fauquier, of the Needles, Arrow Lake, in the Kootenays, writes: "I have been very successful with strawberries, one year clearing $523.50 (£105) off a little less than one-third of an acre." This gives an average of $1,570 (£314) per acre. A grower at Burnaby, whose name I am not at liberty to disclose, has sold $400 (£80) worth of strawberries off one-quarter of an acre, or at the rate of $1,600 (£320) per acre. Another grower in the same locality netted $1,000 off 1¼ acre of strawberries, or an average of $800 (£160) per acre. Another striking illustration of the value of the strawberry has come under my notice as I write. In 1908 Mr. R. A. Bevan, of Creston, shipped strawberries all the way to Sault Ste. Marie, between Lakes Superior and Huron, in Eastern Canada, a distance of 3,000 miles, and they arrived in good condition. In January, 1909, he sold his crop for the following summer in advance for $3.10 per crate, equal to about $1,300 (£260) per acre.

If we now add these figures to the returns for even young apple trees, we obtain an average gross return per acre of $575 (£115) to $1,500 (£300). Allowing 50 per cent. for cost of production, we get as net yield an average of $275 (£55) to $750 (£150) per acre. These figures, it will be seen, compare not unfavourably with those from the older fruit-growing regions of Washington and Oregon. In the matter of strawberries alone the returns for British Columbia are easily 100 per cent. superior to those from the Hood River Valley.

In British Columbia nearly all orchards are planted as yet with mixed fruits, so that it is difficult to obtain the actual figures for each kind of fruit separately. We have, however, the result of the Coldstream Ranch, near Vernon, belonging to Lord Aberdeen, where even a few years ago 20 acres of Northern Spy apples produced $10,000 (£2,000) of fruit, or an average of $500 (£100) per acre. Peaches at Peachland, beside Okanagan Lake, have yielded at the rate of $467 (£93) per acre; and tomatoes in the same locality have yielded $1,500 (£300) per acre. Mr. Thomas Morley, already quoted, says that $400 (£80) per acre can be produced from a four or five-year-old orchard. Mr. John Hyslop has gathered peaches at the rate of $2,450 (£490) per acre. The same gentleman has had a return of $1,380 (£276) per acre for cherries. Mr. Johnstone's average gross return for cherries is at the rate of $1,050 (£210) per acre. I myself have half-a-dozen cherry trees, ten to twelve years old, which for three or more years past have produced more that $20 (£4) worth of fruit each. This, with sixty trees to the acre, would give an average yield of $1,200 (£240) per acre. Mr. J. D. Honsberger, at Grand Forks, has cleared off an eight-acre orchard of twelve-year-old prunes a net profit of $275 (£55) per acre. A fruit-grower at Ladner, in the delta of the Fraser River, sold one year $900 (£180) worth of raspberries off an acre, and in the following year $820 (£164) worth. Mr. John Hyslop also has had returns from raspberries at the rate of $900 (£180) per acre.

To take a couple of instances of mixed fruit growing. I am told in a private letter that a man at Salmon Arm "bought 80 acres five years ago, paying therefor $400 (£80), $100 cash and $100 per year at 8 per cent. After making his first payment he had $32 left, and for a time was disabled with a cut foot. He left his wife in England, and supported her there by working in the woods or on the roads. He planted raspberries and strawberries, and now has his place paid for, a nice little cottage, and a team of horses. His wife is with him, and for two years he has not worked for others." Another settler established himself at "Maple Ridge fourteen years ago, with approximately $3,500 (£700). He bought ten acres, built a comfortable cottage, planted four acres of plums, apples, etc., and three acres of strawberries. Later he planted half an acre of sweet cherries. He has made money from the start, and in one year banked $4,000 (£800)."

If now we consider these facts and statements as a whole, it is fair to draw the inference that, after the second year from the start, a fruit grower will be able to realise something like $500 (£100) per acre from his land. This is, of course, the gross return: the net return would be equal to about half of that amount. The actual returns which I have been able to gather are nearly all higher than Mr. Palmer's conservative estimate. But even if we assume that Mr. Palmer's figures are correct, it is at once obvious that from a ten-acre orchard in full bearing the fruit grower would realise a minimum net return of $1,500 (£300) per annum. So far as my own experience goes, I do not think it would be at all an unsafe statement to say that to an energetic, intelligent man, who thoroughly understands what he is doing, the actual net return would be nearly double the amount just quoted. A very great deal depends upon the skill and energy that are brought to bear upon the up-building and maintenance of the orchard. While Smith may make a good thing out of it, Brown, on the very next ranch, which does not differ in any material particular from Smith's, may be unable to make anything.

Capitalising the minimum net return arrived at above at a 10 per cent. valuation, we obtain as the value of the fruit land

$1,500 (£300) per acre. Consequently, unimproved fruit land is not dear at $100 (£20) per acre, even though it should cost as much again for clearing, and produce nothing for the first two years.

CHAPTER XXI.

PROSPECTS.

As I have pointed out in the preceding chapter, it is difficult in the case of the Kootenay orchards, where the trees are young and fruits of different kinds are all grown on the same acre of land, to obtain data which are perfectly conclusive. To help out the defects arising from this circumstance, I have quoted figures of actual yields from the fruit-growing districts of Oregon and Washington, where the orchards are, as a rule, some eight years older than they are in the Kootenays. It would not be difficult to give returns of yields from one or two trees for individual years, as, for instance, $12 (50s.) from a Keiffer's Hybrid pear tree; $50 (£10) from five Gravenstein apple trees; $25 (£5) from three Smuts peach trees; $40 (£8) from three Alexander apple trees; $81 (£16) from one Black Tartarian cherry tree; $175 (£35) from eight Royal Anne cherry trees; $105 (£21) from three Governor Wood cherry trees; $42 (£8 10s.) from six Golden Russet apple trees; $33 (£6 10s.) from six Northern Spy apple trees; and so on. This is, however, almost all that can be done as yet for the Kootenays. From those data we have to estimate the yield per acre, knowing, as we do, the number of trees of each kind of fruit which should be planted on that area. On the other hand, it is easy to supplement this kind of half-estimated fact by the general experience of trustworthy fruit-growers, who are actually engaged in orchard work.

Mr. F. G. Fauquier says (1906): "I have been living on my present location on the Lower Arrow Lake, at the Needles, about midway between Nakusp and Robson, for the past four years. My clearing has cost me from $30 to $40 per acre—that is, cleaned up clear of stumps and roots and ready for the plough. . . . . Small fruits of all kinds do very well here, especially raspberries; they will yield enormous crops if cared for. . . . . Apples, pears, plums, and cherries all have given most satisfactory results with me. The early apples have come into bearing the second year after planting, and have continued since then giving more or less of a return every year. Bartlett [Williams'] pears the same. . . . . The future I look upon as assured for this country. . . . . there need be no doubt of the prosperity of ranchers and others in this district—a small fortune for the man who is willing to work and use his brains in connection with it. I do not know of any country where a man can as easily make a living in so short a time as in this district."

Mr. Thomas Morley, writing in April, 1907, says: "We are exceedingly fortunate in Kootenay in the absence of insect pests. It is true we spray our trees, but simply as a preventive. . . . . We claim to be absolutely free from any of the pests which cause much trouble and expense to fruit growers in other parts of the Continent of America. . . . . We can produce Wealthy apples three years after planting, and Northern Spy in the fourth year. The Northern Spy will produce about four boxes and the Wealthy four or five boxes per tree in five years. The price ranges from $1.50 (6s.) to $2 (8s.) per box. . . . . There is no danger of the market being overcrowded, as the influx of settlers into the Canadian North-West is greater than the increase in fruit production. The English market, the best in the world, is also clamouring for our apples, and winter varieties of Kootenay apples command the highest price there. The new official class 'Fancy' has been created to designate the apples produced in Kootenay, which exceed in quality the requirements of the highest class under previous regulations. The province has stringent inspection laws, and vigorous means are taken to assure the cleanliness of all orchards and of all stock and fruit imported. . . . . Orchard land unimproved sells from $100 (£20) to $150 (£30) per acre, and clearing costs $35 an acre, and upwards. A ten-acre orchard can be planted and brought to a paying basis in four years for about $3,500. If planted in fruit trees only, a revenue of $175 (£35) per acre will be secured. If planted in the meantime with such crops as strawberries and potatoes it would yield at least $375 (£75) per acre the second year."

To the statements contained in this excerpt no exception can be taken, apart from the value put upon wholly unimproved land. Such land can be bought at prices ranging from $50 (£10) to $100 (£20). The estimate of $3,500 (£700) for bringing a ten-acre orchard from the state of virgin forest to the stage of a producing orchard is, I should judge, about correct.

A KOOTENAY ORCHARD HOME.

Mr. John Hyslop has written: "After having been engaged in growing fruit in Ontario practically all my life, I came to the Kootenay district about seven years ago, and took up fruit growing. The result has been extremely favourable, and I would not exchange one acre of bearing fruit trees in Kootenay district for ten acres in Ontario. My reasons for these statements are as follows: The trees here begin to bear at an earlier age. The yield is almost double. The quality and colour are unsurpassed. The keeping qualities of the fruit are much superior. The market facilities are unequalled. The yield of strawberries, raspberries, and other small fruits is enormous. In consequence, I have found that the profits per acre are three-fold or more than those of Ontario."

Mr. Roy C. Brock, late Secretary of the Kootenay Fruit Growers' Association, who was trained on one of the best-conducted ranches in the Hood River Valley, says (1908): "One of the best mixed orchards I have known yielded an average of $550 (£110) per acre, giving a net profit of $265 (£53) per acre, and these figures may be safely used as the basis for calculation in Kootenay district. This net profit is 10 per cent. valuation of $2,650 (£530) per acre. . . . . The conditions of soil and climate in Kootenay for growing strawberries are equal to, or better than, those I know of elsewhere, the yield is remarkably large, and the berry rather firmer than that grown farther south. . . . . This year the berries will average the grower net, after paying all selling charges, $2 per crate of twenty-four one-pound boxes. I think the price is not likely to be lower for a number of years, because this year we had to meet several unusual adverse conditions. For commercial purposes I would recommend none but firm varieties that will stand shipping. Those most satisfactory are Magoon and Clark's Seedling. . . . . For planting I would recommend that, after the land is cleared, a heavy crop of clover be ploughed under, and after that is decomposed the plants be set. . . . . Strawberry growing, I am convinced, when intelligently carried on, will continue to be a safe and highly profitable investment in Kootenay. . . . . All the conditions are ideal for raspberries, blackberries, currants, gooseberries, and other small fruits. The two first-named are of much greater commercial value than the others, and the firm varieties will reach Winnipeg in good market condition. . . . . Some time ago I estimated the profits of a good orchard at $265 per acre, and further observation has not changed my opinion. Single trees or small portion of an orchard might exceed this, but taking one year with another the whole orchard would average about this return. . . . . I look forward for many years to a steady demand and good prices in the prairie provinces of Canada for all the apples we can grow. . . . . Pears will also continue to be a very profitable crop. The fruit will bring a little higher price than apples, and the trees will require a little more care. For varieties, I would recommend Doyenné du Comice, Beurré d'Anjou, Beurré Easter, and Winter Nelis as good keepers and ready sellers."

Mr. R. M. Palmer, Deputy-Minister of Agriculture for the Province of British Columbia, says: "The cost of making a twenty-acre orchard is variously estimated from $2,500 to $3,500, according to the first outlay on land and the cost of local labour conditions. Care and maintenance for five years, or until the orchard begins to bear, would cost about $2,500, less the value of small fruits and vegetables planted between the trees, and the fifth year's return of fruit, which in all should pay the original cost of the trees. In the sixth year the orchard should produce $850 worth of fruit, in the seventh $3,200, and in the ninth $5,800, after which it should pay a net annual profit of $125 to $150 per acre, and assured income for life of $2,500 to $3,000 a year. This estimate is, it is stated, justified by actual experience. . . . Fruit-packing has been brought to a fine art in the province, the methods used being considered perfect by experts. Careless or dishonest packing is not tolerated, offenders being severely punished."

Finally, Mr. Charles Lucas, Provincial Assessor of Land and other Taxes for the Kaslo District, writing in September, 1907, says: "Good land under cultivation, clear of stumps and stones, so that it can be cultivated by horse power, with

perpetual water rights and ditches and flumes constructed, favourably situated on Howser, Kootenay, Slocan, or Arrow Lakes, or on streams emptying into or flowing out of these lakes, is worth $150 (£30) to $250 (£50) an acre. Unimproved land is worth the difference between these figures and the cost of making these improvements. A well-selected, well-cared-for apple orchard, five years old, is worth $500 (£100) to $600 (£120) per acre, and at ten years $1,000 (£200) to $1,200 (£240). The districts named are, from a climatic and soil point of view, particularly well adapted to growing apples, plums, cherries, strawberries, and most small fruits of first-class quality, quite equal, in the opinion of experts who have investigated them, to the best-known districts of British Columbia, Washington, Oregon, and Idaho. I have visited these districts, and find average prices to be: Good land under cultivation, with water rights, exclusive of improvements, $350 (£70) to $600 (£120) per acre; five-year-old orchard, $800 (£160) to $1,000 (£200); and full-matured orchard, $1,200 (£240) to $1,800 (£360) per acre. Fruit lands in Kootenay are selling at less than in other districts, because they are not so well known. From the foregoing estimates, which I submit are correct, the difference in values of West Kootenay lands and those of the same quality in Okanagan and other districts should be sufficient inducement to capitalists to invest in Kootenay lands. It costs $35 (£7) to plant an acre with one-year-old trees, and an average of $15 (£3) an acre to care for them until they are five years old; after which they ought to pay expenses. I am convinced that the West Kootenay is equal, if not superior, to any other known district for growing fancy fruit, first-class apples, and their keeping qualities are unequalled. I conclude that a first-class five-year-old orchard will cost the owner $360 (£72) an acre, and is worth $550 (£110). After five years it will pay a profit, and at ten years the owner will have received five years' fruit, and the orchard will be worth $1,200 (£240) per acre."

A striking proof of the value which is attached to the fruit lands of the Kootenays was afforded in the summer of 1906, when Earl Grey bought fifty-four acres on the main Kootenay Lake. He has since then had them laid out as a fruit ranch. "In the Kootenay district," wrote a prominent citizen of Nelson recently (1908), "the average price of unimproved land is about $50 per acre. Good fruit land under cultivation, clear of stumps and stones, so that it may be cultivated by horse power, is worth from $150 to $250 per acre."

Mr. Cockle, of Kaslo, says (1908): "Subdivided blocks of ten acres, free from rock, command $75 to $100 per acre. A few small tracts of cultivated orchards are to be had, and the price varies from $300 per acre up. Exception has been taken to the value placed by holders on the land; but the best evidence that prices are not inflated is found in the fact that at the recent Government land sale at Creston prices far in advance of those asked by dealers were obtained, and in many cases the purchaser was a local man, thoroughly posted as to the values."

The land at Creston, near the southern extremity of Kootenay Lake, which was sold at public auction in November, fetched from $20 to $150 per acre. This was uncleared, unbroken land belonging to the British Columbia Government, and the sale was attended by many buyers from the fruit-growing districts of the United States. The purchasers, however, were nearly all local men, men who knew the true value of the land, and were not deceived or misled by any puffery of the enterprising real-estate agent.

Orcharding is a delightful occupation; but it is not an indolent life. No man can sit on his verandah all day and expect his ranch to buy him bread and cheese. Fruit-growing means work—solid, hard work—work from the first glinting of the dawn to the creeping up of midnight. It means an unceasing vigilance. It calls for the constant, daily exercise of a high intelligence. Once again, it calls for work, long and strenuous hours—at all events, throughout the summer. Hear the cry of the tender of orchards!

Awake! awake!
The doe and the fawn
Steal from the dew-dripping brake
At the first soft whisper of dawn.

Awake! awake!
The wings of the mist,
The shivering, slumbering lake
Like swallows already have kissed.

Awake! awake!
The spear-shafts of morn
On the mountains quiver and break

In flashes of fiery scorn.

Awake! awake!
Oh play not the drone!
But move like the startled snake
As it darts from the sun-drenched stone.

Awake! awake!
To shuffle and shirk
Avail not. For worry and ache
The cure of cures is work—
Work—work!

Nor will this imperative call to work by any means cease when you have guided your orchard through its childhood's years. Even when it begins to repay you for your love and unremitting care, you will still find that it makes no light demands upon your energies. Spraying will have to be done, once, twice, perhaps three times, during the spring and summer. The soil will have to be kept free from weeds, and the surface maintained in a state of fine pulverisation. The fruit will have to be thinned, gathered, graded, packed, and loaded up for market. In fact, if you grow fruit that is worth growing, you must prepare yourself to lead the strenuous life; and if you can combine with that the postulates of the simple life, so much the better. The greater will be your satisfaction, the more enviable your lot. In any case, you will lead a delightful open-air life; rain and sun, sweet airs, earth's wholesome scents, the mysteries of all growing things—these will be your constant and ever-eloquent companions. Surely there are in such a life, if in any that earth affords, the elements of the truest happiness. The delight of the artist who creates a thing of beauty—such is one reward of the faithful tiller of the soil. Healthful vigour in the bodily frame, sunny cheer in heart and mind—these are other guerdons of his lot.

Still, although fruit-growing in British Columbia may be described as an ideal life, the material conditions which surround it are not yet all that could be desired. It is not all warm sunshine and fair breezes—not yet. Smooth progress is hampered to some extent by impediments, though fortunately they are impediments which time and growing experience will in all probability remove. One of the most noticeable of these hindrances is the high cost of hired labour. This is, no doubt, felt the more from the fact that few, if any, orchards have as yet reached the stage of greatest profitableness. Most orchard-growers are as yet working under the load of maximum expenses and imperfect, incomplete returns. But year by year the balance will tend nearer and nearer towards a satisfactory equilibrium.

Again, the marketing of the products does not always proceed so satisfactorily as might be desired. This is, of course, a very important branch of the fruit-growers' operations. Owing to the relative geographical positions of the markets and the orchards, the task of selling apples, strawberries, and other fruit is carried on under unusual conditions, and hampered by difficulties altogether foreign to the experience of the European grower. The basis on which the marketing of orchard fruit is being attempted is that of mutual co-operation on the part of the growers. That is, beyond all question, the true basis to work upon; co-operation is, in fact, dictated not less by the distance of the markets than by the small size of the great majority of the fruit ranches. But as yet the organization of some of the fruit-growing districts falls considerably short of perfection; though others again, such as Victoria, work smoothly and quite successfully. With the example and stimulus afforded by the splendid organization of the Hood River Apple Growers' Union before them, the fruit ranchers of British Columbia have every encouragement to persevere. What others have done, they too can do. Where others have succeeded, they too can achieve success. Those who best understand the position of affairs are fully confident that ere long the fruit-growers of British Columbia will be able to market their products as successfully as the fruit-growers of Yakima, of Wenatchee, of the Hood River Valley.

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FOOTNOTES:

Whilst passing this chapter through the press, the author has gathered close upon a quarter of a ton of Black Tartarian cherries off a single tree, the crop being worth $65 to $75 (£13 to £15).

Transcriber's Notes:
hyphenation, spelling and grammar have been preserved as in the original
Page 8, they must be ==> they must be.
Page 13, had been proven. ==> had been proven."
Page 26, Average prices ==> "Average prices
Page 124, by this they ==> by this time they
Page 127, he said: "German" ==> he said: "German."
Page 189, or more those ==> or more than those

[The end of *Fruit Ranching in British Columbia* by John Thomas Bealby]