

Fruit Growing in British Columbia

The Canadian Horticulturist

JULY, 1907

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TORONTO

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AN IRRIGATION CANAL—A FEATURE OF BRITISH COLUMBIA FRUIT GROWING

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Summer Season

FROM MONTREAL
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[According to Steamer]

STEAMER

FROM
LIVERPOOL

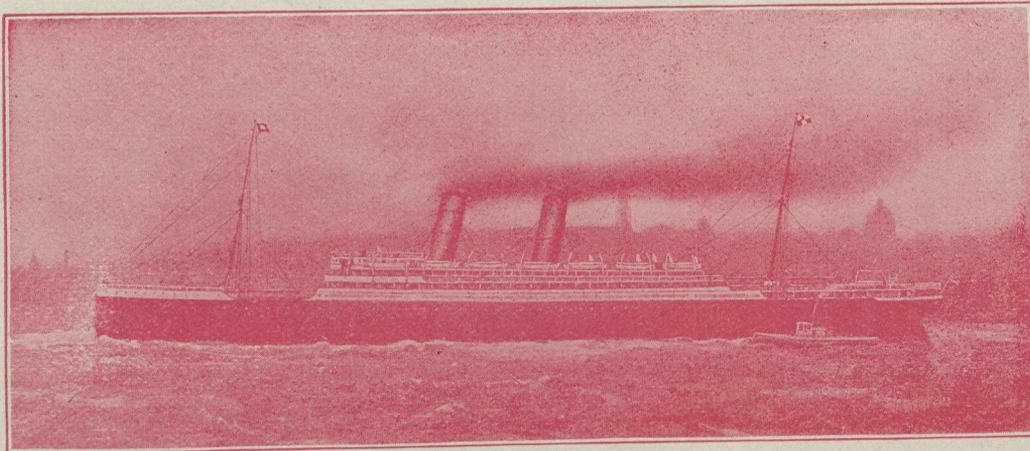
Fri. June 28	Empress of Britain	Fri. June 14
Sat. July 6	Lake Champlain	Wed. " 19
Fri. " 12	Empress of Ireland	Fri. " 28
Sat. " 20	Lake Erie	Wed. July 3
Fri. " 26	Empress of Britain	Fri. " 12

FROM MONTREAL
AND QUEBEC
[According to Steamer]

STEAMER

FROM
LIVERPOOL

Sat. Aug. 3	Lake Manitoba	Wed. July 17
Fri. " 9	Empress of Ireland	Fri. " 26
Sat. " 17	Lake Champlain	Wed. " 31
Fri. " 23	Empress of Britain	Fri. Aug. 9
Sat. " 31	Lake Erie	Wed. " 14
Fri. Sept. 6	Empress of Ireland	Fri. " 23
Sat. " 14	Lake Manitoba	Wed. " 28
Fri. " 20	Empress of Britain	Fri. Sept. 6
Sat. " 28	Lake Champlain	Wed. " 11



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The Canadian Horticulturist

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View of Grey Canal, Coldstream Valley, B.C. Cover
 Photograph furnished by H. Gordon, Vernon

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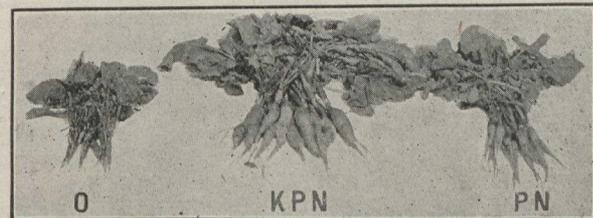
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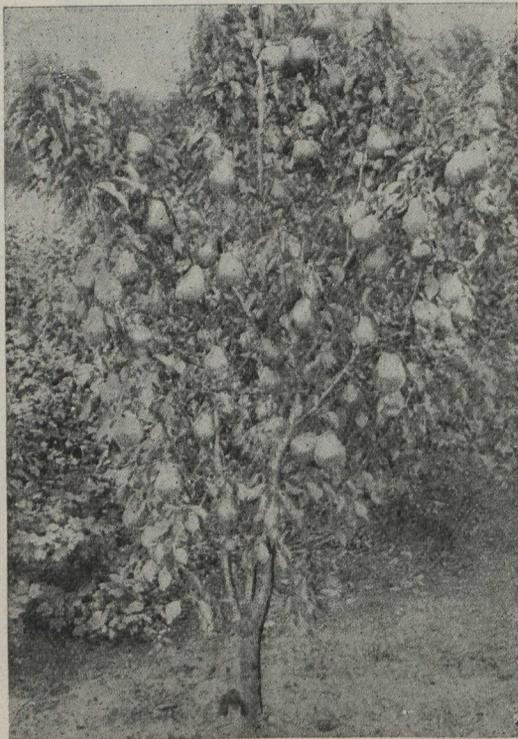
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Department of Agriculture, Experimental Farm of British Columbia,
MESSRS. STONE & WELLINGTON, AGASSIZ, May 29th, 1906.
Toronto, Ontario.

GENTLEMEN,—Yours of the 21st to hand. I know that you will be pleased to learn that I have had splendid success with the scions I received from you. Your trade in the Kootenays should increase very rapidly, as your trees are good and being grown in a limestone soil are better constituted than those grown on this Coast where there is no lime in the soil.

Yours faithfully,

(Signed) THOS. A. SHARPE.

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TORONTO ———— ONTARIO

The Canadian Horticulturist

Vol. XXX

JULY, 1907

No. 7

The Fruit Industry of British Columbia

Maxwell Smith, Dominion Fruit Inspector, Vancouver

FRUIT growing in British Columbia, like the climatic and soil conditions in its various districts, is so diversified in character and of such importance that it is hardly possible to do the industry anything like justice in the space at our command, and when the reader has perused this article to the end, he must bear in mind that there still remains much to be said on the subject. A historical sketch would be of interest to many, but the wants of intending settlers or investors may be better served by a general outline of the present conditions and prospects of the industry.

Although it is only sixteen years since the first full carload of fruit was shipped out of British Columbia, progress has been fairly rapid and people are now beginning to realize something of its possibilities as a fruit-growing province. In the season of 1904, the fruit crop of British Columbia was valued at \$600,000 and the area under cultivation estimated at 14,000 acres.

In 1905 the area under fruit had been increased to 20,000 acres, and the total revenue derived therefrom was nearly one million dollars. In the same year something like \$500,000 was expended in the purchase and improvement of fruit lands and the average price received for grade No. 1 apples from October 1, 1905, to March 31, 1906, was \$1.27 per 40-lb. box, f.o.b. shipping point. The early varieties started out at \$1 net, and during the latter part of February and March as high as \$2 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 per 40-lb. box; prunes and plums, 75 cents per 20-lb. box; peaches, \$1.15 per 20-lb. box; strawberries, \$2.30 per 24 basket crate; raspberries, \$2.19 per 24 basket crate; blackberries, \$2.40 per 24 basket crate; gooseberries, 5½ cents per lb.; crab apples, 2½ cents per lb.; tomatoes, 5½ cents per lb.; currants, 7 cents per lb.; cherries, 9 cents per lb.

Outside of the quantities consumed in our own cities the chief market for British Columbia fruit is the prairie provinces; a market which will always

demand the best that the fruit-grower can produce and in ever-increasing quantities, so that British Columbia need have no fear, no matter how rapidly the industry develops, of an over-production of good, clean commercial varieties. The province is most favorably situated, in being contiguous to the great plains of the middle west, where fruit-growing on a commercial basis is not likely ever to be a success. That territory is sure to increase rapidly in population and the consumption of fruit will be enormous. It is a curious fact that the average family on the prairies consumes more

they become tired of the more rigorous climate of the prairies.

The topography of the country from the standpoint of the fruit-grower may be better understood by a reference to the map which accompanies this article. The geological formations and climatic conditions render it necessary to divide the fruit-growing area of the province into nine general divisions.

No. 1 might be called the southwestern coast district, which includes the southern half of Vancouver Island, adjacent islands, and what is usually called the lower mainland. Here the production of small fruits may be said to be more successful, and consequently more profitable, than that of the tree fruits. Nevertheless, there are a number of very excellent varieties of apples, pears, plums, prunes and cherries which grow to perfection in this district, besides many different varieties of nuts, and, in especially favored spots, peaches, grapes, nectarines, apricots and other tender fruits.

In most parts of this district the mild character of the climate and the excessive moisture during the winter season are very favorable to the development of fungous diseases, and it is therefore necessary to practice persistent and systematic spraying of the orchards, clean cultivation of the soil, and a thorough system of under-drainage in order to get the most profitable results.

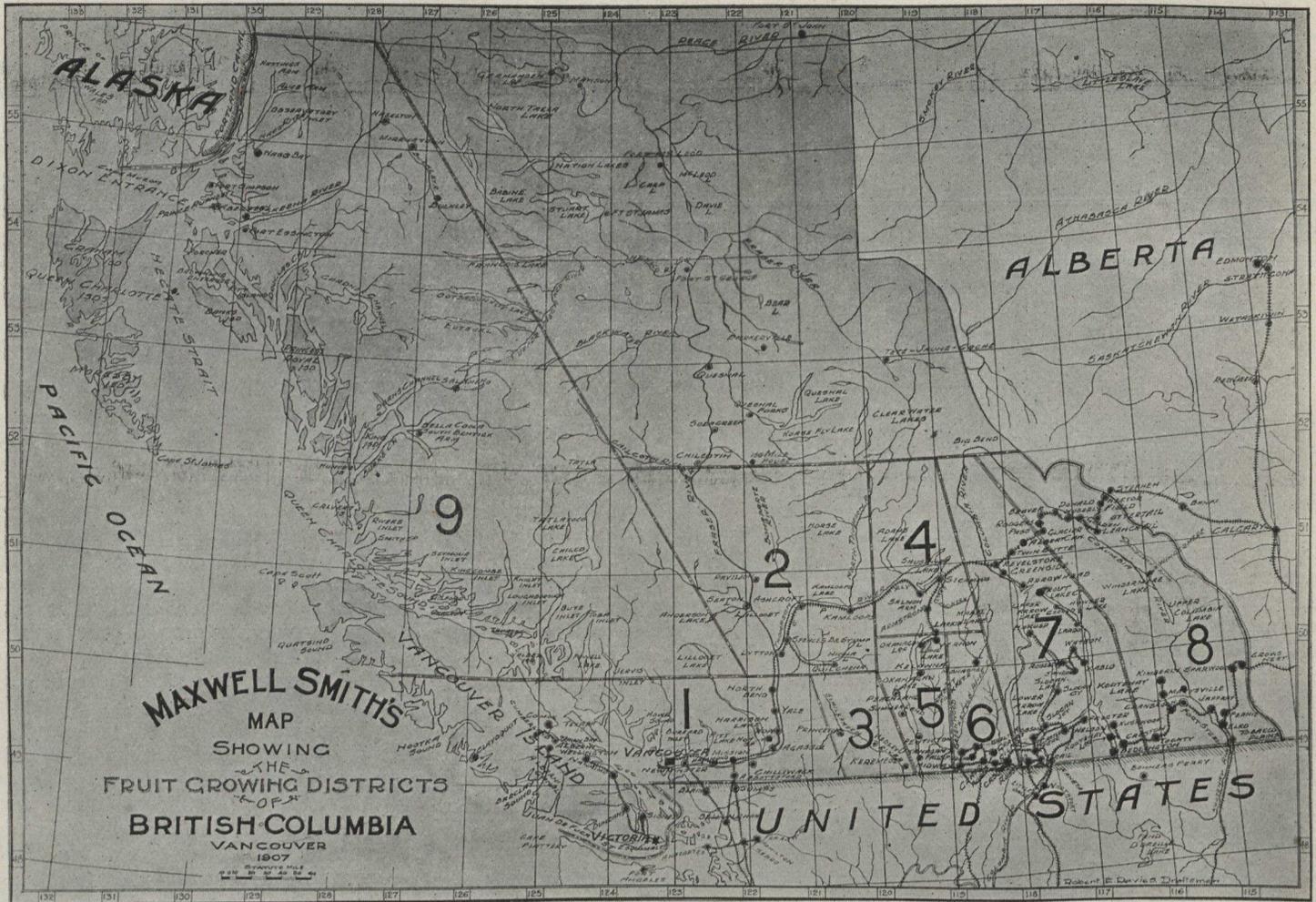
District No. 2 includes the valleys of the Upper Fraser, as far north as the fifty-second parallel, the main Thompson, the North Thompson, the Nicola and Bonaparte Rivers. Here there are practically none of the above-named difficulties to contend with, but the question of water to irrigate the lands is one requiring serious consideration, as without an abundant supply of water in the "dry belt" it is impossible to be sure of a crop every year. The prospective fruit-grower, however, does not have to contend with the heavy forests along these rivers that have to be encountered on the coast. The fruits grown are of the very highest quality and include all the varieties mentioned in connection with district No. 1. One of the largest

For British Columbians

Allow me to congratulate you on the very marked improvement in THE CANADIAN HORTICULTURIST. Each number is better than the preceding one. The reduction in price should have the effect of placing it in the home of every lover of fruit and flowers.—W. J. Brandrith, Secretary-Treasurer—British Columbia Fruit Growers' Association.

fruit than do those of British Columbia and it is quite natural, also, to expect that as the farmers of Alberta, Saskatchewan and Manitoba succeed, within a comparatively few years, in laying by sufficient to keep them in comfort for the rest of their lives, they should look to British Columbia, with its congenial climate, magnificent scenery and tremendous, unexplored and undeveloped natural resources, as a place in which to spend their declining years.

There is little need for this province to spend money in trying to induce immigrants from other countries to come here and settle. The best immigration work that British Columbia can do is to develop the fruit-growing industry and to send large quantities of first-class fruit properly grown, harvested, packed and shipped into the great grain country east of the Rocky Mountains. This will judiciously advertise the province and bring our own people here as soon as



vineyards in the province is located near junction of Fraser and Thompson Rivers.

District No. 3 may be briefly described as the valleys of the Similkameen and its tributaries, portions of which are perhaps the most tropical of any part of British Columbia, and most favorable locations for the cultivation of grapes, peaches and other delicate fruits, wherever sufficient water for irrigation purposes is available.

No. 4 includes the districts surrounding Adams, Shuswap and Mabel Lakes and the valley of the Spallumcheen River. Here the natural rainfall is sufficient and splendid apples, pears, plums and cherries are successfully grown. The climatic conditions in this district resemble very much those of southern Ontario, and a fruit-grower with fixed ideas from the latter province might be more successful in this district than he would on irrigated lands. The timber is, generally speaking, light and the land rich.

No. 5 is the great Okanagan valley, stretching from Larkin southward to the international boundary. The vicinity of Kelowna in this valley contains the largest area of fruit lands of any one place in the province. Peaches are now being shipped in large quantities from the Okanagan, and all other northern fruits are successfully grown by the

irrigation system. Improved modern methods are in general use by the fruit-growers in this district and the industry is perhaps more advanced than in any other part of British Columbia.

No. 6 is usually called the Boundary or Kettle River country, and although the smallest of all the districts named, the quality of the land is excellent and the climatic conditions all that could be desired. Where a sufficient water supply is obtainable, there is no trouble in producing fruit of the highest quality.

No. 7 is West Kootenay, an enormous fruit-growing district, where only a little progress has been made on the southern portion, but sufficient to indicate the possibilities and the superior quality of the fruit which may be raised along those lakes and streams. The neighborhood of Nelson and Kaslo has accomplished wonders in the past few years, but the shores of the Arrow lakes are practically untouched by the hand of the fruit-grower, and the valley of the Columbia, from the Big Bend south to Arrowhead, affords opportunities little dreamed of by many of those in search of fruit lands. In the greater part of this district, irrigation is only necessary in the very dry seasons.

District No. 8 is the country known as East Kootenay and is separated from

No. 7 by a range of mountains. It is traversed by the Upper Kootenay River from the fifty-first degree of north latitude southward to the international boundary, and from Columbia and Windermere Lakes northward by the Upper Columbia River, to the Big Bend. In the southern portion of this district there are immense stretches of thinly-wooded lands suitable for fruit-growing purposes, and the valley of the Upper Columbia has many choice locations for the enterprising fruit-grower. The lack of transportation facilities is a great hindrance to the development of the fruit lands of the Upper Columbia.

District No. 9 comprises the vast coast region including the Queen Charlotte Islands and the northern half of Vancouver Island, from Jervis Inlet to Portland Canal. There is little known of its capabilities, but undoubtedly it has a few surprises in store for the future. Though in small quantities as yet, apples, peaches and grapes have been successfully grown on the Skeena River. The first apple trees were planted at Hazelton in the spring of 1901 and fruited in the fall of 1904.

For a considerable distance inland from the west coast, there are numerous valleys and plateaus, which are well adapted to growing many of the hardier

varieties, though fewer in number than those suitable for the first-named district.

Notwithstanding the conditions and adaptabilities which may be in a general way characteristic of the large districts above mentioned, there are always peculiarities of soil and climate, soil moisture, atmospheric currents, etc., which must be taken into consideration, and intelligently utilized by the individual settler when choosing varieties to plant or deciding on methods of cultivation.

That the supply of water from mountain streams for irrigation purposes is limited, should always be borne in mind and in those portions of the province where irrigation is necessary, the prospective settler or investor should be exceedingly careful that a proper supply of water is obtainable, and that he secures a legal right to use it, when purchasing fruit lands. There are many of the so-called dry districts where the soil moisture, with proper cultivation, is quite sufficient to produce a full crop in an ordinary year, but there comes periodically, the extraordinary year when, without an artificial supply of water at the critical time, the whole crop may be lost. In the arid districts, it should be seen to that the right to a sufficient sup-



Peach Plums that Weighed Six to a Pound
These were thinned at end of third week of growth
Photograph by B. T. Boies.

Arrow and Kootenay Lakes, which can not be irrigated from the available mountain streams, but it may safely be predicted that some day in the not distant future, a genius will arise who will invent a comparatively cheap method of pumping the water from these large reservoirs up to the higher levels, and who then will venture to estimate the quantity of rare and luscious fruits which this province may be capable of producing, or the gratitude that future generations will lavish on the memory of the man who shall make the cultivation of these beautiful plateaus possible? Then will the glittering Okanagan Lake become a magnificent water highway, through the midst of densely populated stretches of orchard lands. On either shore will be one continuous line of superb villa homes, and all up and down those scenic galleries of luxurious gardens will dwell the kings and queens of husbandry in the happy performance of the first duties allotted to mankind.

By establishing high standards and the practice of high ideals, both in the quality of their products and business methods the fruit-growers of British Columbia should have a large share in building up the commercial character of the province which, like the golden



Section of British Columbia Prize Fruit Exhibit, London, England, 1907
Photograph furnished by courtesy of R. M. Palmer, Victoria.

ply of irrigation water is obtained, whether it is needed every year or not.

There are immense fertile tablelands

along the Thompson, Columbia, Kootenay and Similkameen Rivers and the Kamloops, Okanagan, Upper and Lower

beams of the summer twilight, shall shed its benign influence eastward over the great Dominion of Canada.

Fruit Growing in the Okanagan Valley

H. Gordon, Vernon, British Columbia

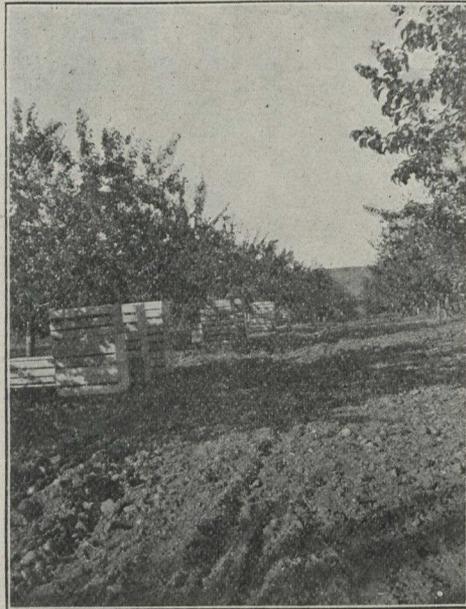
THE success achieved within it by a number of old-established growers of fruit has gained a reputation for the Okanagan valley which attracts increasing numbers of land-seekers. The Okanagan valley is reached from Sicamous Junction on the main line of the Canadian Pacific Railway by a branch railroad which runs for 40 miles through the Spallumcheen valley and the northern end of the Okanagan valley to the head of Okanagan Lake. The valley averages three miles in width. The lake lies north and south, and is about eighty miles long. Parallel to this lake at its northern extremity lies the picturesque Long Lake twelve miles in extent, the valley of which runs north for thirty miles, and merges in the Okanagan valley at Kelowna. The Coldstream (or White) valley joins the Okanagan valley from the east close to Vernon, which is situated a few miles from Okanagan Lake and two and a half miles from Long Lake.

DISTRICTS FOR FRUIT CULTURE

After leaving Sicamous the thriving little towns and fertile districts of Enderby and Armstrong deserve mention first. Here the rainfall appears to be sufficient in some parts to allow growth without irrigation. Vernon is the railway and agricultural centre of the valley. It lies 1,260 feet above sea level, and is surrounded by beautiful country and many orchards, as well as by much land adapted to fruit growing. The most striking feature is the uniform adaptability to fruit culture of large contiguous tracts of land. This is the

is being planted largely in the Coldstream district; this apple is somewhat fastidious in regard to soil and climate, but the growers have confidence that the local conditions are suitable.

Kelowna lies close to Okanagan Lake upon its eastern shore, and is the important centre of a growing district



Harvesting Spys on Coldstream Estate

Twenty-five acres netted in 1905, \$12,000. Photo by Boie containing at present about 3,000 acres of orchard. The same varieties of apple are grown as in the Vernon district, but Yellow Newton Pippin is now popular. The orchard of Mr. T. W. Stirling is the chief of many good orchards in Kelowna, just as that of the

matemat that about 100,000 peach trees have been planted in one settlement alone, that of Summerland, during the last two years; whilst its twin neighbor; Peachland, follows closely upon its example. Triumph, Alexander, Hale's Early and Yellow St. John, are amongst the leading varieties. The growers wisely supplement the growing of peaches with the less hazardous culture of the apple, and produce excellent fruit; but as yet have, of course, placed only a very small fraction on the market of the possible future annual output.

The prospects before these energetic and enterprising settlements are excellent, and they are making sturdy progress under the enthusiastic guidance of Mr. J. M. Robinson. Both places depend for communication only upon the lake steamer, and the settlement named Penticton, situated at the southern extremity of the lake, is at a similar disadvantage. The soil at Penticton resembles generally that of Summerland, and apples and peaches are planted in a similar manner. Thirty thousand acres are here in the hands of the Southern Okanagan Land Co., under the management of Mr. W. T. Stratford. In the old homestead of the property stands a cherry tree which produces fruit in a manner to rival the prolificness of a Kentish orchard. The poetic imagination of the Winnipeg estate agent has calculated on the basis of the doings of this tree the amount of profit derivable from an acre of cherry trees, humorously forgetting that it has taken thirty summers to bring this cherry to its present productive state. Cherries are being planted here as elsewhere throughout the valley, Bing, Lambert and Royal Anne being the most popular varieties. It is probable that Penticton will ultimately prove an important fruit section.

The last twelve months has seen the birth of several new centres designed to attract the fruit grower. Okanagan Centre and East Summerland are amongst the most promising of these, and offer attractions to those who desire to share in the development of a district from its beginning.

SUCCESSSES

From this brief survey it is evident that the Okanagan valley promises to be an enormous fruit producer. The northern part is proved to be well adapted for apple culture; the southern half is probably a good peach country; throughout the whole valley, cherries, plums, prunes, and pears succeed in properly selected parts. The fruit pro-



Sutton Beauty Apple Trees in Mr. J. L. Webster's Orchard, Vernon

Photograph furnished by Mr. Maxwell Smith

favorite apple district, and seems to have an assured future. The chief varieties grown are Spitzenberg, Jonathan, Wagner, Wealthy, Northern Spy, McIntosh Red and a few others. Cox's Orange Pippin, acknowledged throughout the markets of Europe as the best flavored apple in cultivation,

Coldstream Estate holds the premier position in Vernon.

South of Kelowna, the black loam of the north is replaced generally by a more sandy soil. Several of the few old-established small orchards here have made a success of peach growing, and stimulated others to follow. It is esti-

duced hitherto, notably the Coldstream apples and the Summerland peaches, has attained a high standard. The apples from this valley obtained the highest awards at the Royal Horticultural Society's Show in 1906, the awards being for the attainment of a certain fixed standard; not as is erroneously supposed, in competition with exhibits from other parts of the world. This is encouraging, but the high price secured by the fruit in open market is even more satisfactory. The price of the best irrigable land at present is from \$150 to \$200 per acre. An article on the climate and irrigation will be published in another issue.

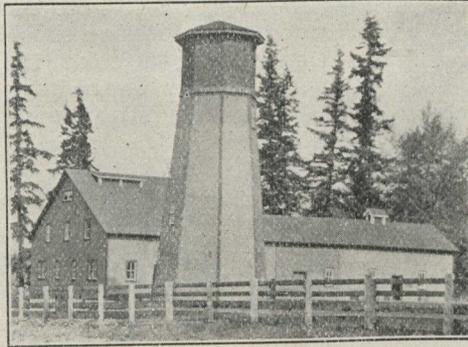
SETTLERS TO THE PROVINCE

The Vernon district is popular with settlers from England and eastern Canada, and the same may be said of Kelowna. The newer settlements lay themselves out to attract the ever increasing number of farmers in the prairie provinces and Manitoba who are turning further west in search of less rigorous conditions. Summerland and Peachland find great favor amongst settlers from the prairie provinces. Summerland attracts a particular class in virtue of the absence of a liquor license, and the establishment of a Baptist College in the newly-formed municipality.

EXPENSES OF LIVING

The cost of living is high to eastern

ly speaking, about \$5,000 are required for every ten acres of land to cover all the expenses of culture, planting, fencing, modest buildings, living, and so forth, until the orchard produces some income at the end of five or six years. The net profit to be expected from an orchard in full bearing has been estimated variously, but always without consideration of the important and inconstant personal factor, which renders all such estimates unreliable. It



The Fruit House, Coldstream Estate
Photograph by H. Gordon

is, however, beyond question, that skill and industry may receive handsome reward in this pursuit. Experienced growers of vegetables and small fruits may utilize the spaces between the trees to obtain a return during the early years; a careful study of market and labor conditions is necessary be-

The necessary common labor is scarce and dear. The question is becoming serious, and already orchards are showing evidence of neglect forced upon the owners by the difficulty of obtaining labor and by the high rate of wages.

MARKETS

The chief market for the produce of the valley lies in the northwest provinces and Manitoba. The favorable geographical situation of the province indicates the wide possibilities for the opening up of other markets. There can be little doubt that markets will be found for all fruit of good carrying and keeping quality.

TRANSPORTATION

The means of communication throughout the valley—railways, lake steamers and roads—are scarcely adequate to the needs of a rapidly growing and important agricultural and horticultural district. It is a truism that enterprise in these directions brings its own reward. There seems an excellent opening for the establishment of a system of light electric railways connecting the chief centres and giving them outlet north and south.

PESTS AND INJURIES

The provincial authorities exert themselves to prevent the incursion of pests and have so far succeeded in preventing the arrival of the San Jose Scale and other foreign scourges. But the



A British Columbia Home and Young Orchard near Victoria
Photograph furnished by R. M. Palmer

Canadian and English eyes, but is no more than in the west generally. The cost of caring for the orchard cannot be estimated with accuracy, but rough-

fore embarking on this branch of horticulture. The districts of Armstrong and Enderby excel in the production of some vegetables and strawberries.

boast that pests are entirely unknown can no longer be made; the usual troublesome and injurious ones are arising from within.

How British Columbia Fruit is Packed

B. T. Boies, Vernon, British Columbia

PRACTISING and demonstrating with the natural fruit is practically the only way fruit growers can learn to pack properly. The packing of a box of apples by a novice is something he will never forget. He soon sees that the placing of a few small specimens in the holes to fill the case is a great mistake. Do not use small stuff to fill in with. Call it a cull in the start, and save trouble and poor returns on a shipment of good fruit.

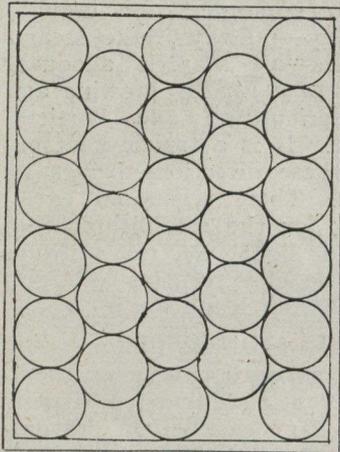
The California and Oregon method of

the body again place -1-1-; this placement must be in the "holes" between the first three placed in the box. This is the start of the second tier. By placing one orange in each space in this tier, we get in twelve; tier number three has 13; tier number four has 12; tier number five has 13; thus, one-half the side is filled, making 13-12-13-12-13=63. Reverse ends, lay out as before, we should again have 63, completing the box of 126.

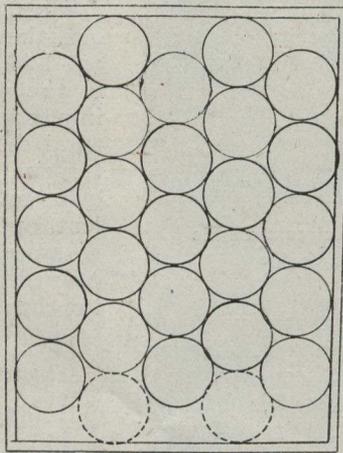
Follow this same rule with the packing of apples of certain sizes, laying

comes accustomed to the "sizing," he soon sees where, if he has used too small an apple, or too large, it can be changed and one to fit the hole will ratify matters. Thus, with packing pears with paper, by the placing of the first three in the end of case, or the first four, then three, the fruit locks itself in very readily.

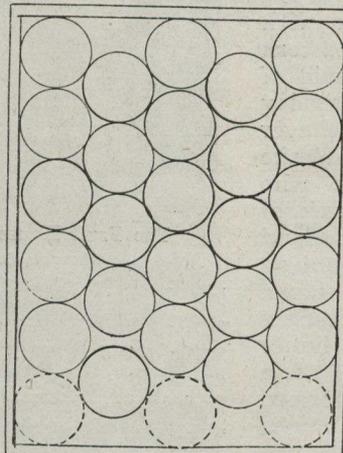
I have packed the Fameuse and the Alexander in the Canadian standard box while demonstrating near Montreal, and turned the box upside-down, and back



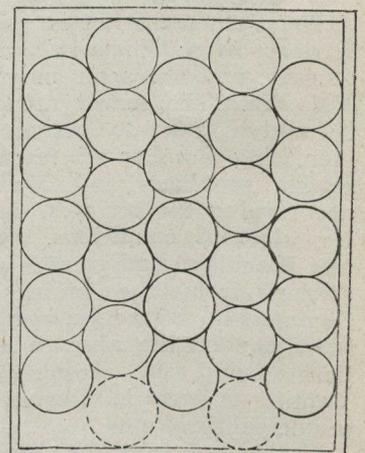
First Tier of Apples in Box



Second Tier in Same Box



Next or Third Tier



Top or Fourth Tier

packing apples was adopted at the Coldstream Ranch, in the Okanagan district of British Columbia, in 1900. The rip-rap pack, that any one can see by looking at a case of oranges or lemons as packed in California and on sale by merchants all over Canada, has been the most useful method. The solid pack, also, as used at Hood River, Oregon, is of great advantage for some sizes of fruit.

The former method is one that is easily learned, as the fruit, as packed, is sorted by the packer, who must have a quick eye at picking sizes, for when once a box of fruit has been started with a certain size, be it large, medium or small, that one particular size of apples, plums, pears, peaches or tomatoes will have to be followed up in each row or tier throughout the whole package. In a case of 126 size oranges (known thus because that number is always packed in a box), the oranges are sorted by machinery. The size is determined and placed, one at a time, starting at the end of the case next to the body, with one in each corner of the box and one in the space half way between. Next place two, one in each space. Now we have five. In the three spaces place, 1-1-1; next, -1-1-; next, 1-1-1. In the said orange box, we now have 13 oranges; this represents the first layer or tier. Beginning at the end next to

three, then two, and so forth, beginning the second tier with two-three, two-three; thus, the fruit does not lay on direct top of specimen below it, but in the hollow between. See the diagrams.

These show a four-tier, rip-rap, 110-size of apple. The last three or two apples placed in the row will always

again, with not an apple falling out of the box. Other kinds can be done likewise.

Some growers say that the apples should be packed "solid"—one on direct top of another. In reply, I would say there are too many sizes of apples to allow the packer to follow this rule.



British Columbia Fruit in Boxes for Export

bind the whole tier firmly. Perhaps, a slightly larger apple will be necessary to make it more secure with no "rattle," "slack," or rolling. After a packer be-

Apples can be packed in boxes either flat on the side or diagonal, if when so packed they completely fill the box, and have a half to three-quarters of an



A Variety of Fruits Grown and Packed in British Columbia

Photograph furnished by Mr. James Grant, Victoria

apple above the box. The top or bottom (when properly packed, either can be opened for display), pressed and then nailed, gives the "belly" or flare. This should never appear on the side of the box, as a box of apples should always be laid on the side for handling and shipping. Care in this matter pays.

In packing peaches, the rip-rap-packed box is the only proper way. All British Columbia peaches are packed the same as those in California; likewise, pears, plums and cherries (ten-pound flat box, or with cartons). Some hurry-up shippers at times use the four-basket (tin top) twenty-pound crate for cher-

ries, plums, prunes and tomatoes, putting the fruit in roughly and jolting well down; but the greatest proportion of this delicate fruit is handled on the green side and quite firm, using paper between all fruit, and thereby insuring the best prices and no chance of loss. The better the packing the greater the reward.

Care of Gladiolus Flowers

H. H. Groff, Simcoe, Ontario

As our whole interest in the gladiolus centres in the beautiful flowers—which for beauty and diversity in the whole range of color have no equals in horticulture, and their durability when cut for table and other decorative purposes is unexcelled in their season—it is well to be fully informed as to the treatment that will ensure the best results.

Cut the spike when the first flower opens and place in water without overcrowding. Remove the terminal buds soon, as this checks stalk development and throws the strength into the larger and earlier maturing flowers. The end of the stalk should be shortened and the water renewed daily with frequent cleansing of the vases. In shortening the stalk, cut diagonally, to insure free absorption of water by the spike without the contamination and obstruction, caused by sediment, if cut at a right angle.

The fact that blooming the spikes in the shade of a room or piazza modifies the field colors, from bright shades and tints to delicate flushes and shadings,

and also reduces the latter types to the faintest tinge of color or white, is well known to experienced growers. The advent of my new hybrids producing the most intense and deep shades of violet, purple, crimson and scarlet, hitherto unknown, as well as new yellows and other bright colors, makes it desirable that these brilliant combinations be preserved when the spikes are cut for decorative purposes.

To ensure this most desirable result, place the vases of these highly colored types in the early morning sun for an hour or two daily, preferably after renovation and renewal of the water. This practice will also enable the retention and normal presentation of the original delicate tints and shadings referred to in the preceding paragraph, if so desired.

As it takes about three days after cutting to bring the spikes into strong blooming condition, this should be allowed for in advance of the date of intended use. The spikes can be shipped a thousand miles by standing them on

end in suitable baskets or boxes. On arrival, cut off the end of the stalk, and remove the terminal buds before placing in water; they will then revive quickly and with proper care give pleasure for a week or more.

One of the causes of the popularity of the gladiolus as a decorative flower, is the fact that it has no perfume, as there are few flowers used for this purpose that are not distasteful to some one—particularly in closed rooms—either from personal preference or painful association. Where the pollen proves irritating to the tissues of the respiratory organs, as in the case of hay fever subjects, the anthers may be easily pinched out during the daily renovation, when the faded florets are also removed. This removal of the anthers is desirable in the highly colored types referred to, where the shed pollen dulls the brilliancy of the petals on which it may fall.

The pink-flowered dogwood is a gem among small trees. It is one of the most beautiful shrubs of spring.

Late Spring and Early Summer Border Plants

Wm. Hunt, Ontario Agricultural College, Guelph

THIS class of plants has not received the attention from many of our flower lovers that their beauty and usefulness most deservedly entitle them to. The long spell of triple-season



The Garden Primrose

weather—sometimes winter, sometimes spring, intermingled with a few days of quite summer weather—that we have experienced during the last two months, has brought out more prominently than usual the usefulness of many varieties of late spring and early summer flowering plants.

After the gay galaxy of beauty in the border that the spring flowering bulbs, such as tulips, hyacinths, narcissi and so forth, give us, there is too often in many flower borders a period of comparative dullness before the better known and later summer flowering occupants of the border, such as iris, peonies, delphiniums, campanulas, and other varieties, help to brighten it up.

Spring bedding, as it is termed in England, where the cool spring season often extends from the end of January until early June, gives ample scope for the exercise of the use of this class of early decorative plants. With our usually short, uncertain spring weather, this system of spring bedding cannot, as a rule, be successfully carried out. Although we may not be able to have whole beds or borders entirely of these plants, such as pansy, violas, primulas, Phlox subulata, forget-me-nots, Alyssum saxatile, and others of a like nature, many of them can be used very successfully in an ordinary perennial or mixed flower border with marked success and effectiveness.

CORYDALIS NOBILIS

This perfectly hardy and showy border plant, a native of the frozen north of Siberia, should be in every collection. Its long, drooping racemes of pale yellow

flowers, together with its attractive and graceful fernlike foliage, make it a pleasing and showy object in the border in April or early in May. Very early spring or early in autumn is the best time to transplant this *Corydalis*.

Corydalis bulbosa is another variety very useful as an early flowering plant. This, as its name implies, is a bulbous-rooted variety, very useful as a border or for rockeries. The bulbs should be planted early in autumn.

PHLOX SUBULATA (MOSS PINK)

The several varieties of these beautiful dwarf little plants, with their showy, compact masses of pink, reddish purple, and lilac flowers, make them indispensable amongst our low-growing border and rockery plants. The varieties *rosea*, *atro-purpurea*, and *lilacina* are the most effective and hardy for border work, the different shades of color being

PRIMULA POLYANTHA (GARDEN PRIMROSE)

Primroses delight in a rather moist, partially shaded position. A hot, sunny position does not suit them. They grow readily from seeds or division. The best time to divide the plants is as soon as they are out of flower. Water and shade them carefully for a week or so after planting. Seed sown in spring or early summer will produce flowering plants the following season. There are a great variety of colors to be had in garden primroses, white, yellow, lilac, and brown being the prevailing colors and shades. Garden primulas should be seen in every flower garden.

PRIMULA OFFICINALIS (ENGLISH COWSLIP)

It is quite hardy as a rule, and when treated as described for other primulas, makes a pretty border plant. In very exposed borders or in the northern sections of the province a light winter pro-



Iceland Poppies in Border at Ontario Agricultural College

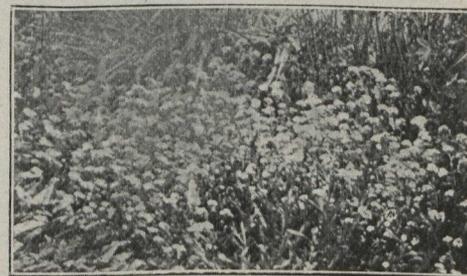
Photograph by E. J. Zavitz

indicated in the specific varieties mentioned. A mass of these showy little plants makes a very conspicuous spot in a border. The best time to plant or divide the clumps of this plant is as soon as they are out of flower. Avoid planting them on low ground where water lies during winter. Shade and water after planting for a while.

FORGET-ME-NOT

Myosotis grandiflora (*M. sylvatica*) is the forget-me-not that succeeds best in gardens. The forget-me-not succeeds best in light soil and in partial shade, although they will give good results in the open border. Seed sown in spring or early summer will give flowering results the following year. When once established it seeds and renews itself every year, if the situation suits it. The blue type is the showiest, although the pink and white varieties are very pretty. No border should be without a clump of these appealingly pretty, sentimental, spring and early summer flowers.

tection may be required. Some light rubbish, such as old raspberry canes, or a few small pieces of brushwood with a few leaves or some strawy manure lightly placed over the plants about middle of November, or a few pine boughs placed



Forget-Me-Nots

over the plants until spring, makes a good winter protection for primulas.

Primula Cashmeriana is a very beautiful early flowering variety, its pale lavender blue flowers being very beautiful in early spring. Unfortunately,

this variety is more tender than the ordinary garden primula or primrose of the polyantha type.

Primula vulgaris, the well-known English hedge primrose, is also tender and requires protection in winter. Some new and strong growing types of the polyantha primrose have been introduced recently that are very effective as border plants, and are quite hardy in most sections of Ontario.

PAPAVER NUDICAULE (ICELAND POPPY)

Plants of this pretty little hardy poppy that have wintered over will also give a

fine display of its pretty shell-like flowers. This is one of the best of the poppy family as a cut flower, and is very effective for that purpose. Seed sown in spring and at different times during the summer will give successive batches of bloom the following summer. The Iceland poppy is one of our best border plants, especially in light soils.

The plants mentioned are only a few of the easily grown border plants that the flower-lover can have to brighten up the border after the gay, spring-flowering bulbs have dropped their showy petals or have become dulled and dim-

med by the approaching heat and drought of summer. The pretty little bunch of tufted pansy, *Viola cornuta*, *Alyssum saxatile*, and some of the dwarf early flowering veronicas or speedwells, not forgetting the garden daisies, *Bellis perennis*, are quite hardy in most parts of Ontario. These and others could be mentioned, but more about them, if all is well, in a future number. In the meantime prepare now so as to have some of these early flowering beauties in the border for the next and successive spring and early summer seasons.

Lawn and Garden Hints for July

CONSTANT stirring of the surface soil in the flower garden will not only destroy weeds, but also will help the growth of all kinds of plants. Deep working of the soil is not necessary. A strong rake or a light scuffle hoe will do the work easily and well.

Do not forget to stake and tie all plants that require support. Many fine plants have come to grief because a stake could not be found handily just

regularly. They are not only unsightly, but also exhaust the vitality of the plant.

Late in July or early in August is usually the best time for planting new clumps of garden lilies or for transplanting and dividing the old clumps. Almost all kinds of lilies, however, dislike transplanting or moving very often. It should be done only when necessary from overcrowding. Lilies do not like

A mulching of strawy manure, or of lawn grass clippings spread thinly around aster plants, will help them to develop their flowers in the hot weather. The plants do not require as frequent or copious supplies of water when the soil around them is well shaded. This mulching process is also beneficial to newly planted fruit or shade trees during the hot months of July and August.

*See that the pansy bed receives plenty



A Summer Garden on Toronto Island

This illustrates the summer home of Dr. Sheard, Medical Health Officer for Toronto. The garden was made on barren sand

when the plant needed tying. Tie with soft twine so as to prevent damage from friction. Use neat stakes.

Unless you are desirous of saving seed, keep all decayed flowers picked off

manure placed near their roots when transplanting. A mulching of strawy manure on the surface of the ground around them is much more beneficial than if placed around the roots underground.

of water. Keep the blossoms well picked, so that no seed can form and to insure a constant supply of bloom until the cold weather.

One of the most attractive features

of summer decoration is the verandah box. They do not cost much. Any amateur can make, or have made cheaply, a box of the desired length with plenty of depth and width. Place them on the verandah and plant with nasturtiums and single petunias. Add a few geraniums and two or three German ivys. The plants need plenty of water when they are growing vigorously. For shaded verandahs, use begonias and coleus.

Two or three prunings of privet hedge make the best hedges. The first should be given when the new growth is six to eight inches in length, in June; the second, when shoots are again of same length, and the last just before growth finally ceases.

THE KITCHEN GARDEN

Keep down the weeds in the vegetable garden. A loose earth mulching on top of the soil around all growing crops is a necessity in hot weather. It prevents evaporation of moisture from the soil. It is best to water all newly-planted plants as soon as the work is done. It settles the earth around the roots and gives them a fair start. If you have a constant water supply available, continue the watering. It is better to give plenty of water every few days than a little each day. The best time for amateurs to apply the water is at night.

Plenty of manure water for young celery plants will amply repay for the trouble in maintaining a supply constantly on hand. It is hard to over-feed or over-water celery plants. Celery should be planted early in July if wanted for fall use, although fairly good celery sometimes can be had by planting as late as the first week in August. In the amateur garden it is advisable during the hot days of July and August to place a twelve-inch board over the celery plants for a few hours in the middle of the day.

There is time yet to put in a row or two of dwarf beans and some corn for late use. Sow the early varieties of corn, such as Early Cory and Country Gentleman, as these mature quickly. The best kind of beans to plant now are Early Six Weeks and Early Valentine.

Late cabbage and cauliflower should be planted at once, if not already attended to. If you have a vacant spot in the garden, utilize it by setting out these plants.

Potatoes should be sprayed once or twice during the season, when in full growth, with Bordeaux mixture and Paris green. This will not only keep down the beetles or "potato bugs," but also will destroy the fungi that produce rot and blight. For this purpose, use the ingredients in the following proportions: Lime, four pounds; blue vitriol, four pounds; and water, forty gallons. When this mixture is prepared, add to it eight ounces of Paris green. Apply

when the vines are dry. Should you not care to make the Bordeaux mixture, use Paris green alone.

If really good leeks are wanted, they must be planted in a trench so that the earth may be drawn around them conveniently for the purpose of blanching. Leeks grown in this way are considered by many to be far superior to onions when boiled.

The best kinds of lettuce for hot weather are the black seeded varieties. Shade the lettuce with an inexpensive home-made screen.

Sow some early variety of peas in a cool, partially shaded spot for September use. Sow on July 1 and 15.

Cucumbers for pickles may be sown this month. Sow Eclipse beet for fall use; it should mature in 50 days.

Do you know the pleasure of having winter radishes? Sow the Half-long Black Spanish winter radish once before July 15. The roots become seven



Cattleya Maxima

to ten inches long and, after being stored in a dry cellar, require two or three months to mature. The flesh is white, mild and crisp.

AMONG THE FRUITS

The highest quality in raspberries and blackberries is secured by not picking the fruit too early. Growers who produce these fruits for market are compelled to pick them rather early to insure their safe arrival. The amateur gardener can afford to allow the fruits to remain on the canes until well matured. Blackberries particularly are delicious when left on the bush until they are thoroughly ripened.

During the first season in the new patch of brambles the essential thing to do is to provide moisture and to promote a vigorous growth. This is best done by means of tillage. Bushes planted around the borders of a garden may be mulched with straw or strawy manure often with excellent results, but, whenever practicable, tillage is generally advisable. Cultivate shallow for all brambles are shallow rooted; deep cultivation increases suckering. It is best to stop

tillage after the first of August to ripen the canes.

When the blackberry and black raspberry shoots are about eighteen inches high, pinch off the tips so as to branch them. These bear more fruit than long, unbranched canes; are easier to handle and winter-kill less.

In the home garden, strawberries may be fruited twice or three times, but on rich soil, with extra good care, the first crop may be very heavy. In that case, it is generally best to plow down the patch as soon as fruited. A new lot of plants should now be coming on to take the place of the old bed. If your new strawberry plants are still blooming, remove the blossoms at once so as to allow the plant energy to go towards the production of runners and new plants instead of fruit.

Cattleya Maxima

Fred. J. Goode, Toronto

The subject of the accompanying illustration is an excellent example of the free-flowering type of orchidaceous plants. Although introduced years ago, it does not seem to have attracted the attention of commercial and private growers to whom it should appeal through its extraordinary free-flowering qualities, and easy culture.

The bulbs of this variety often exceed eighteen inches in length, slightly furrowed and club-shaped, surmounted by one and sometimes two oblong sub-marginate leaves. These bulbs often produce spikes of from five to eight flowers. The sepals and petals are blush-rose. The lip is variegated with dark crimson veins.

Individual flowers often measure five inches across and last in perfection from two to three weeks. The flowers are thrown well above the plant on good long stems, the stem of each flower being long enough from the main stem to give the plant a most graceful appearance and make it a valuable plant for exhibition and cut flower purposes.

This variety of Cattleya succeeds better in a little higher temperature than most Cattleyas, but, in all other respects, the treatment should be the same. Overhead-syringing twice daily is far more beneficial than too much root watering. These plants often throw two strong growths from the same lead in one season.

The pink-flowered dogwood is a gem among small trees. It is one of the most beautiful shrubs of spring.

The Chrysanthemum Flowered Sunflower deserves a prominent place in the garden. The magnificent flowers are six to eight inches in diameter, densely double and show no centre.—N. S. Dunlop, Floral Dept. C.P.R.

The Peony of Value for West

C. D. Harrison, Peony Specialist, York, Nebraska

IN recent years great strides have been made in the development of the peony. All through eastern and western Canada it is a brilliant success. At the Brandon Experiment Station, Manitoba, one clump had sixty fine blooms, and the plants never were mulched or manured. Most cheering reports come also from Saskatchewan and Alberta. It is encouraging to know that one of the most glorious, transcendently beautiful and fragrant of flowers will grow anywhere that it is planted or horse radish can thrive. In fact, peony blooms are much finer in Canada than in Kansas or Nebraska, because the air is cooler. After years of careful testing, however, the writer finds a great difference in the hardiness of the different varieties. The new manual has thus classified them: The Indolent, the Sensitive, and the Free-blooming. [Note—Mention will be made of this manual in the August issue.—Editor].

Those of you that have peonies, just watch them. Some kinds never seem to bloom. They give all their vigor to foliage. Others are nipped in the bud, and you will find a little black ball where there should be a flower. These are the sensitive ones. There will be others that "glory in tribulation"; they care nothing for the sudden changes and severity of the weather or the untimely frosts.

Most of the kinds sent out by James Kelway & Son, of England, are very sensitive. I have had several kinds from them which have not given a bloom in five years. Now, as we raise peonies for flowers, we cannot give them a place if they cannot bloom in several years.

Some sorts bloom on the least provocation. We had a bad spring, some days ninety-five degrees above, and in a day or two the ground would be frozen, and yet some kinds of peonies have not paid the least attention to such trying ordeals. One of the best and hardiest is Golden Harvest, which originated in Nebraska. The new manual gives a fair description of it. I never knew it to fail, and reports from Manitoba speak in the highest praise of it. The resplendent Baroness Schroder blooms abundantly. L'Esperence is a glorious fragrant pink, one of the very earliest; this never fails. There are many others that can be relied on. There are, however, 2,000 named sorts, many of rare beauty, but only about one-fourth of them can be depended on for annual blooming. There are no more satisfactory plants raised than peonies.

At present there are many people engaged in raising new varieties. This is a most fascinating work. The writer has 25,000 on the way, and among them there will be some of rare merit. Any-

one can engage in the business and reap much profit and pleasure. Millions are needed for the north and the vast north-west. When it is known that the finest of all the flowers finds a paradise in all that region it will give a zest to the business. Men, women and children, with but little experience, can engage in the work.

Care of Dahlias

The later that dahlias are planted, the greater the chance of freedom from injury by the dahlia "bug." Late planted dahlias produce the best blossoms. They do best in cool, moist seasons. In dry seasons the striped

The lateral branches thereby will be made to start near the ground.

When flowering time arrives, a little disbudding must be done. The buds usually are produced in threes. As the centre one generally makes the best flowers, it is wise to pinch the other two off. This will result in a much better bloom.

To Keep Cut Flowers Fresh

Those who wish to make their cut flowers last the longest, so that they can get the most pleasure out of them, should be careful to give them a little extra attention in order to prevent their losing their beauty too soon. This is especially desirable during the winter where flowers have to be bought at a high price from a florist, or some patient home-grower



A View of Midsummer Comfort and Beauty

dahlia "bug" is most active. It is difficult to combat, but when conditions are unfavorable for it (that is, cool, moist weather with plants started late in the season) it will not do much damage.

Dahlias are gross feeders. If you desire fine flowers, you must not allow the plants to suffer from want of water or stimulants. Excellent fertilizing material for dahlias is liquid manure.

In most home gardens dahlia plants are allowed to reach their full height and are tied to stakes. To grow them without stakes, pinch out the centre of each plant after it makes two or three joints.

has spent much time and care in bringing her plants into bloom.

The simplest way to keep blossoms fresh: see that the ends of the stems are cut with a sharp knife in a clean, even cut, and to clip off a little more from the ends of each just before giving the flowers fresh water every morning. Do not let the flowers be too crowded in the vase and keep them if possible where they will not be in direct sunshine, nor too near the heat from the register or radiator.

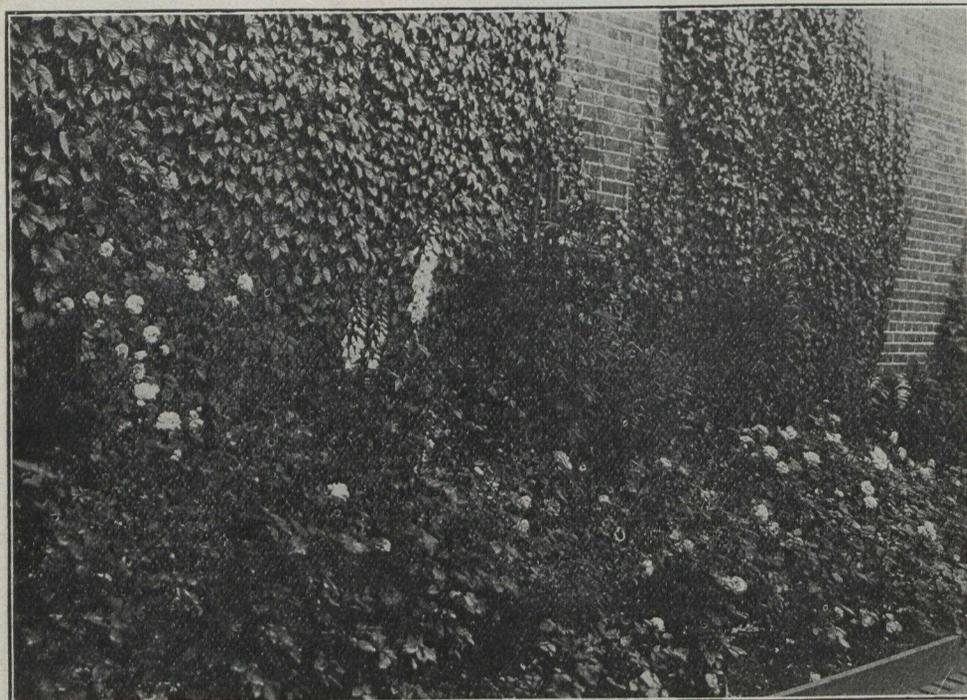
At night set the vase containing the flowers in a vessel of water and place in a cool place. Some persons take the

flowers from the vase and put in bowls of water where the stems will be covered nearly to the blossom, and cover with newspapers and set out on the window-sill, unless it should be cold enough to freeze the blossoms, when they are placed inside a cool place.

Walks and Driveways

When planning new grounds, walks and driveways must be taken into consideration. On large grounds they should be used to link the more important features of the landscape together, and to serve as entrances. They have an effect on the appearance of the place and, as they are not beautiful in themselves, they should be as few as possible. The general idea should be simplicity and directness.

On grounds of considerable extent,



A Beautiful Rose Bed Backed by Vines at Residence of Dr. D. G. Storms, Hamilton, Ont.

the walks and driveways should be laid out in moderate curves, not winding or twisting, but gracefully curving from the point of entrance to the house. The points of entrance are better located at the sides. On small city lots, where space is limited, we are restricted almost to straight lines, but occasional slight curves may be employed with effect.

Golden-leaved California privet is deemed hard to keep in its golden habit, because of the green shoots it will make. If these green shoots are persistently cut away as soon as they form, there is no trouble in keeping the shrub to its desired character; and it is highly ornamental.

Styrax Japonica

Roderick Cameron, Niagara Falls, Ont.

The beautiful shrub or small tree, *Styrax Japonica*, blooms in June. It is a native of China and Japan, from where we get, and have got, many beautiful and valuable plants. This is not, by any means, the least valuable, where it proves to be hardy. *Styrax Japonica* is a handsome shrub of very graceful habit. It is the hardiest of its class; and no doubt it will be a surprise to many to know that this very beautiful plant thrives, perhaps, better in this locality than in Japan. I believe that it will thrive still further north than Niagara Falls—it should get a fair trial anyway. The best authority in the United States says that it is hardy as far north as Massachusetts in sheltered situations.

The buds, before they open, resemble very much a white fuchsia bell in form.

flowers, leaving the best, with three or four flowers to a stem to seed. When ripe pick the pods which will contain about seven seeds each. Those at each end of the pod will be smaller than the rest, discard these, and save only the big, fat seeds for next year, and you will probably get improved plants and flowers from them. By this method, I have been able to get many flowers with sturdy stems 16 and 17 inches long. The earliest flowers are the best to save seeds from, as those which mature in hot weather do not seem to have the same vitality and strength.

If your garden is very shady you cannot grow fine sweet peas. They thrive best with plenty of air and sunlight. Many of the orange and red varieties burn or discolor somewhat easily under a hot sun; hence, if you want to have pure colors for exhibition, it is a good plan to throw a few yards of cheese cloth over the vines when the sun is striking them strongly.

Growing Squash

A. McMeans, O.A.C., Guelph, Ont.

The best varieties of squash for market purposes are Summer Crookneck, Delicious, Marblehead and Hubbard. Many growers make the mistake of leaving the Crookneck until the shell gets hard; whereas, if they would cut them just as the shell is beginning to harden, or when they can be indented easily by pressing on them with the thumb, the squash would be far more acceptable to the consumer. At that stage they can be taken and washed, and cut shell and all for cooking. A trial will convince any person that this practice is superior.

Marblehead is not grown enough. It has a grayish-white skin with a nearly smooth surface and is somewhat smaller in size than the Hubbard; the flesh is as dry, as thick and as good, and the season of ripening is about the same.

Delicious is a variety that should be grown when quality is required rather than yield. It is a fall and winter variety, small to medium in size, with thick, dry flesh of excellent quality.

If the amateur wants a variety of squash to cover as much of the season as possible, he should try Perfect Gem. Another variety of excellent flavor is Fordhook, but it is too small to grow for market.

A shallow fountain or tank which affords a drinking and bathing place for birds throughout the summer will do much to encourage their presence.

Remember that a vigorous growth of clover in a lawn is a good thing because it enriches the soil in nitrogen and humus, rendering it in the very best condition for a succeeding crop of grass.

They are a beautiful waxy white color when open, except the stamens, which are yellow. The flowers are very fragrant, of a pleasing spicy nature. I have few plants in the park that call for more praise from me than *Styrax Japonica*.

Saving Seed of Sweet Peas

Edwin Utley, Toronto

Sweet peas are very sportive. They occasionally will send out a double stem with 8 to 15 flowers upon it, but this appears to be a deformity. Seed saved from such flowers do not repeat and, in fact, generally produce inferior flowers.

If you desire to save your own seed, do not try to get flowers and seeds from the same vine. Pick out the sturdiest vines to save seed from. Cut the poorer

Some Fungous and Bacterial Diseases of the Potato

Douglas Weir, B.S.A., Biological Department, Macdonald College

THE potato crop of the past few years has been very unsatisfactory in Canada. The mischief caused by certain fungi and bacterial diseases seems to have increased, supplementing the already extensive ravages of the Colorado potato beetle. In Ontario during the season of 1906, the losses caused by diseases of this kind were so marked, that it was impossible, in certain districts, to supply even the local markets, and potatoes had to be imported.

It may be useful to describe briefly some of the pathological aspects of these sources of injury to the potato, as the gravity of the evil sufficiently warrants every rational effort to mitigate it. We subjoin some notes on the early blight, the late blight, the potato scab, and the fungous and bacterial wet rots.

THE EARLY BLIGHT

The Potato Leaf Blight or Early Blight, *Alternaria solani*, was especially widespread and destructive. The disease attacked the leaves and green shoots of the plant, spreading rapidly and checking the growth of the tubers. The first indication of the disease was the appearance of brownish spots on the leaves about the time of blossoming, resulting in the characteristic curling and withering of these parts, in the destruction of the stem, and later, of the young tubers themselves.

It will be readily appreciated that an early destruction of the leaves must of necessity result in greatly diminishing the size of the tubers, for in the absence of leaves the highly elaborated plant food so essential to growth cannot be obtained.

Although the early blight is most frequently observed about the time of blossoming, it may also attack plants at an earlier stage, and not uncommonly has been observed on plants scarcely six inches high.

The common flea-beetle is believed to distribute this fungus extensively. It establishes excellent places for infection, by burrowing holes in the leaves, and may even carry the spores along with it from diseased plants. The remedial measures are the same as suggested for late blight.

THE LATE BLIGHT

The Late Blight or Fungus Rot, *Phytophthora infestans*, has caused even greater loss than the early blight. Moist warm weather is especially favorable to its development, and under such conditions it spreads with singular rapidity. During the warmer, humid weather of July, 1906, which prevailed in many sections, the disease spread so suddenly that fields, appearing healthy and green

one day, became withered and blackened the next.

The infected areas show, in the early stages, a well-defined limiting line, but during such weather as just described, these soon extend over the whole leaf, becoming soft and emitting a very unpleasant odor.

GENERAL MORPHOLOGY

If we examine the brownish spots originating on the under side of the leaves with a hand-lens, we find them composed of many delicate white branching threads, which protude through the *stomata* or breathing pores, and produce (conidia) spores. These spores are



Late Blight—Final Stage

Note the scorched-like appearance. (From the New York Experiment Station, Geneva, Bulletin 241.)

somewhat egg-shaped, colorless, and are blown about by the wind and washed by the rain, until they fall on neighboring leaves or are washed through the soil to the tubers. After falling on a moist leaf or being washed by rain to a young tuber, the spore gives rise to a number of minute swimming spores (zoospores), which move actively about. These eventually settle down and emit slender germ-tubes, which may enter the leaf through a stoma or directly penetrate the epidermis. Once within the plant, the fungus develops rapidly and sends its branching root-threads (mycelium) in every direction.

AN EXPERIMENT DESCRIBED

Many experiments are to-day being carried on by plant pathologists in the endeavor to obtain accurate data as to

the life-cycle of the late blight, so that remedial measures may be taken when they are most applicable and effective. Prof. George Masee describes one of special economic interest which was conducted at Kew. In this experiment three potatoes showing the brownish stains so characteristic of the late blight, were cut in half and planted in pots. Three of the pots were placed in a hot-house at a temperature of about 70° F., where the humidity occasionally reached saturation point, and the remaining three put in a room having no artificial heat and where the air was kept as dry as possible. Equal quantities of water were supplied in each case. The results were, in brief, as follows:

DISCUSSION OF RESULTS

The plants grown under the warm, moist conditions developed rapidly, but the fungus also developed, appearing when the plants were six weeks old, and by the end of the succeeding two weeks the three plants were completely blackened and killed. On the other hand, those grown under dry conditions did not develop as rapidly as the others, but were apparently free from the fungus; when, however, they were removed to the warm, moist surroundings the dormant mycelium developed so exceptionally, that within a fortnight these also were killed.

CONCLUSIONS

From this experiment we may conclude that epidemics of potato blight are influenced largely by weather conditions, and the potato grower is advised to take as much care in selecting his seed potatoes, by obtaining them from districts free from blight, as he now commonly does in selecting his peas to insure freedom from the much dreaded pea-weevil. It should also be remembered that infection by the early and late blights is due, not only to the hibernating mycelium, but also to the spores produced on the leaves.

(To be continued in next issue.)

Black Rot of the Tomato

W. T. Macoun, Horticulturist, Ottawa

This disease did much damage to tomatoes in some parts of Canada in 1906, a large percentage of the fruit being rendered useless in some plantations. When the disease begins to spread on the fruit, small, roundish spots may be seen usually towards the blossom end. These rapidly increase in size, and the tomato becomes discolored and rotten at the parts affected. The spores are given off from dark mould-like masses on the surface of the fruit, and these being scattered re-infect the

fruit. The disease also attacks the leaves. The tomato rot can be controlled by spraying with Bordeaux mixture.

Begin in the hotbed and keep the plants covered with the mixture until the fruit is nearly ripe.

Suggestions on Seed Selection

By "Rambler"

UNDER modern methods of culture and marketing vegetables, uniformity of both growth and product is of the greatest desirability. Generally, the more familiar a man is with any vegetable, and the more intensive his method of cultivating that vegetable, the more he notes and values points of difference. From this, it is but a step to saving his own seed by rigid selection. By this means some of our best varieties of vegetables have come into existence. In such hands they were kept to a fixed type, and through such gardeners gaining fame in their local markets and elsewhere, the enterprising seedsman makes an effort to secure some of the seed, with the result that each individual seedsman and grower strives after their ideals and in some cases breed out the very qualities that made it desirable, because, under the conditions and for the purposes with which that seed grower was familiar, those qualities were objectionable rather than desirable.

Let us now consider some of the facts and laws of vegetable life, and how they may be taken advantage of to produce seed which will uniformly develop into plants of distinct and desired types. Every plant originating from seed has a definite, distinct, and changeless character. This character is inherent in the seed, and is made up of the balanced sum of different tendencies, potentialities, and limitations of development inherited in different degrees from each of its ancestors for an indefinite number of generations, plus more or less influence received from the climatic and other conditions effecting the growth and development of the seed producing plant.

The force of these different ancestral influences is by no means fixed or stable even in plants of the same ancestry. Were all the ancestors of a plant precisely alike and of the desired type, and the conditions for growth equally favorable, all the seeds produced by it would develop into plants equally like their common ancestors.

Under the best modern cultural conditions the environment of plants in a field is practically the same, but there is usually a great variation in the quantity and quality of the product, most of which variation is due to the differences in the individual seed. In the majority of vegetable crops the plants are so variable that if 90 per cent. of them showed the distinctive merit of the variety as well as is seen in the best 10

per cent., the profit and satisfaction of growing the crop would in many cases be doubled. In many cases less than 50 per cent. of the plants show the characteristics of the variety clearly enough to identify it with certainty.

Such facts show that however valuable may be the part of the plant breeder in the origination of new sorts, the great need of the day is not for new sorts, but for seed growers who will furnish us with better and purer stocks of the varieties we now have. The fruit growers have the works of such men as Downing and Beach, with their full, accurate and clear descriptions of each and every variety of fruit, as well as the adaptability of the different sorts to certain places. The poultry fancier has, in the Standard of Perfection, a full, minute and accurate description of each variety of fowl, with the result that throughout the whole of this continent, each and every poultryman is striving for the one and same ideal, and it is only since they have adopted this standard that the poultry industry started to make the strides that have brought it to the front. On the other hand, in vegetables, where the permanence of a variety and the retention of its qualities depend upon a clear statement of its distinguishing characteristics, very little work has been done. Is it any wonder that the smooth-skinned Hubbard squash of 50 years ago, has drifted into the densely wasted Hubbard of to-day? Many claim that the quality has changed as much as the character of the skin.

When we remember that the relative influence of each ancestor may vary in each individual, and the great variation represented in the ancestry of the different plants of most stocks of vegetables, it is not surprising that some individuals are very different and of immensely greater practical usefulness than others, though they often fail to transmit that superiority to their descendants. The only way we can secure seed certain to develop plants of any exact type is to make sure that each and all its ancestors are of that exact type. To do this we must have that type clearly defined, and, in selection, rigidly adhere to it, and not be tempted into the use of plants that vary from that type, even though they may appear individually superior.

Clover follows potash; it is also favored by lime, because lime sweetens the soil and liberates potash.

Notes on Melon Pests

W. G. Horne, Clarkson, Ont.

Insects are troublesome and annoying at times. There are three kinds that make their appearance more or less every year on melons. Each has its own peculiar way of doing work.

The first one to attack the plants is the cut-worm. It has a clean, decided way, and there is no mistaking the results. The next to make its appearance is the yellow-striped beetle. Its mode of attack is quite different. These beetles sometimes come in large numbers and, if left for two or three days, soon destroy a whole melon patch. They suck the sap and tissues from the leaves and make the plant a mere skeleton. No remedy yet known will destroy them. Dusting the plants with land plaster will check them. Apply it in the morning when the dew is on the vines. If dusted a few times the most of the beetles will leave. Some will stay until blossoming is over. They are fond of the blossoms. They are the cause of a great number of deformed melons.

Another annoying and repulsive insect is the pumpkin or "stink" bug. A plant once attacked by this insect commences to wither and gradually dies. His work generally takes place when you are looking forward to getting from four to six nice melons from a hill. Suddenly the vines begin to wilt, and soon the damage is completed.

Dust Spray for Cabbage

Is the dust form of applying Paris green and lime for the cabbage worm of any value?—T. E., Summerland, B.C.

Dust sprays have been tried with considerable success. They have the advantage over liquid sprays, being much easier and quicker applied. Liquid sprays have the objection that frequent applications are necessary and this requires considerable time and labor, making the work expensive. Dust sprays may be applied rapidly and with greater ease. While the dust process is somewhat new as yet, it would seem that it is very effective for leaf-eating insects such as the cabbage worm and the potato beetle. The dust spray is easily prepared. It consists of one pound of Paris green to which fifteen pounds of common flour or air-slacked lime are added. The flour is to be recommended as it is more adhesive than the lime. Care should be exercised to fight cabbage worms when the plants are quite small, as they are most destructive then.

I have noticed in my vineyard that grape rot was most prevalent on a gravelly hill and on knolls, not on clay level. Would like to know if this is so elsewhere.—W. J. Allam, Homer, Ont.

OUR QUESTION AND ANSWER DEPARTMENT

Readers of *The Horticulturist* are Invited to Submit Questions on any Phase of Horticultural Work

The Terrapin Scale

Is the Terrapin scale prevalent in Ontario, and is it a serious pest?—S. M., St. Catharines, Ont.

I have seen the Terrapin scale, *Lecanium nigrofasciatum*, but once or twice in Ontario. Some six years ago, specimens came under my observation in the Kent district, but they have not spread to any extent so far as I have heard. Dr. Bethune of the Ontario Agricultural College reports the appearance of this scale on a maple tree at St. Catharines last summer. I observe that the recent circular from the United States Department of Agriculture, extracts from which were published in *THE CANADIAN HORTICULTURIST* for June, states that it must be considered a dangerous pest. As it is a single-brooded species, I am of the opinion that it will never become widespread. It may become quite numerous on individual trees, and injure the trees attacked, but it will never compare with the San Jose scale.—Answered by Prof. Wm. Lochhead, Macdonald College.

The Codling Worm

I am sending specimens of insect cocoons and larvæ for identification.—C. E. T., Brighton, Ont.

The cocoons hidden away so nicely on the bark belong to the codling worm. Brighton is in that part of Ontario where this insect is mostly single-brooded. In such cases the cocoon is not made until August, and the caterpillar remains in the cocoon until the next spring. The pupa, in such case, is not formed until spring. In the specimens sent the caterpillars were hidden away snugly in cocoons lying in hollows made in the bark.

Bagging Grapes

Is the plan of putting bags on grapes for the purpose of securing extra size for exhibition purposes practicable?—M.H., Stoney Creek, Ont.

The plan is practicable for the purpose mentioned. It may also be employed in the growing of grapes for home use. Immediately or soon after the grapes have blossomed, cover the bunches with two or three-pound ordinary manilla bags. It is the surest and often the most practical way of securing perfect bunches. Slip the sack over the bunch and pin about the stem, leaving no opening to catch water. It is well, also, to make a small hole in the lower corner of the bag so that no water will remain in it. Leave the bag on until the fruit is ready to pick. Bagging grapes prevents injury by

disease and also protects the fruit from attacks by birds; some varieties are greatly improved by the method, and the bloom of the fruit is preserved at ripening time, thus improving the appearance of the fruit for exhibition purposes.

Apple Tree Borers

Kindly give summer treatment for apple tree borers.—H.G., Vernon, B.C.

Prevent the beetles from laying their eggs on the tree by encircling the trunk with a few sheets of paper extending from the surface of the ground to two feet in height. Hill up with earth at the bottom, and make tight at the top with a cord. Above the paper the trunk should be washed from the limbs downwards, and even the larger limbs, with the following mixture: one pint of crude carbolic acid, one quart of soft soap, and two gallons of hot water, mixed thoroughly. Apply with a cloth or soft broom. Use only on old bark, as suggested, not on the young twigs or leaves.

Treatment of Roses

I purchased a couple of rose bushes last fall. They were strong, healthy-looking bushes. I planted them, but am afraid I did not spread the roots enough, so planted them over again this spring. They are strong and green-looking. Will you kindly tell me what to do for them? Would also like to know the quickest and best way to make rose cuttings grow.—Mrs. J. D. M., Lardo, B.C.

Various conditions may have entered into the failure of your rose bushes. As you re-planted them this spring it was necessary, first, to prune them back severely. If this was done, it is probable that they will grow if they are strong and healthy in appearance as mentioned. When they are growing nicely it would be well to work in some poultry droppings around the bushes, as there appears to be no natural manure better suited to the growing of roses.

There are various ways of propagating roses by the use of cuttings. One of them is to fill a shallow box with sharp sand to the brim, pack the sand fairly firmly, sprinkle it with water and insert single-jointed cuttings almost their whole length in the sand. The cuttings may be inserted directly in a cold frame, the soil of which is light in nature. The essentials to success are to shade the cuttings until root growth starts, and to keep the sand saturated with water. It is best to transplant the cuttings as soon as they have a cluster of roots one-half an inch or an inch long. Leaving them too long in sand weakens the cuttings.

Spruce Gall-Louse

I have a spruce hedge that is infested with the gall-louse. How shall I treat it?—W. L., Ellesmere, Ont.

The spruce gall-louse is an insect that is causing much trouble and anxiety to the growers of these evergreens in many parts of the province. Good results in treating it have been obtained by spraying the affected trees at the time the young plant lice are exposed. This should be done at once, so that the treatment may be made before they are enclosed in the galls. The spraying should be done with a tobacco and soap wash or with kerosene emulsion, Towards the end of August when the winged forms of the insect come out of the galls, the spraying should be repeated. The point is to spray when the insects are seen to be moving about. They are so small that a magnifying glass will be required to see them. For a complete job the spraying should be repeated two or three times at short intervals, as the insects do not all come out at the same time.

Ordinary kerosene emulsion is made by the use of the following ingredients: Soft water, one gallon; hard soap, one-half a pound; kerosene, two gallons. The soap should first be dissolved in the boiling water, after which the kerosene is added and the two churned for five or ten minutes. The mixture should be diluted with ten times its measure of warm water before using. There are two essential conditions of success in making this emulsion. The liquids should be warm, and the water as soft as possible.

Cutting Asparagus

When should the cutting of asparagus cease, and how should the bed be treated during summer?—B.N., Nelson, B.C.

If it is desired to keep the bed in bearing, cutting asparagus should cease before July. Late cutting exhausts the roots and shortens the time in which to prepare for the next year's crop. The plants must have a season's recuperation. The roots must be stored with food for another season, and this cannot be done unless the tops are allowed to grow. If the plants are weak or inclined to rust, a little nitrate of soda will help them.

Identical treatment year by year tends to depreciate land.

Golden-leaved honeysuckle is a valuable vine for a situation where a plant of moderate growth with pretty foliage is required.

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A BRITISH COLUMBIA NEED

In the province of British Columbia, where the
majority of fruit growers are novices, more
vigorous efforts than those prevailing now might
be made to disseminate useful knowledge gained
elsewhere. There is danger lest quacks and
empirics should mislead those who, in a genuine
desire to gain knowledge, make manly confession
of ignorance. *Au royaume des aveugles les
borgnes sont rois.* It is difficult to see how the
high quality of Okanagan fruit is to be main-
tained and loss to the individual and country
avoided, unless some well-organized efforts are
made.

A cooperative movement in this direction—
for the provision of valuable knowledge and ad-
vice—would be more opportune than the present
movement for cooperation in the sale of fruit,
having regard to the fact that several years must
elapse before the province can produce fruit to
a large extent. Lectures in the nearest town,
and demonstrations in suburban gardens, are
ill-attended for obvious reasons, and are seldom
worth the time spent upon them; the distribu-
tion of literature is another imperfect half-
measure. The necessary knowledge and advice
should be brought right into the farmers' own
orchard by properly accredited experts, appoint-
ed to go from orchard to orchard. Other coun-

tries have profited largely by such measures,
when thorough and well organized.

It is, of course, absurd to expect the govern-
ment of the province or anyone else to carry out
precautions and scientific methods for the farmer,
but, if it is worth while to invite immigrants
from far and wide to try their hands at fruit-
growing, and to threaten prosecution of those
farmers who do not keep their orchards clean, it
is equally worth while to make provision for
thorough, practical advice and instruction. The
magnitude of the possibilities before the Okana-
gan Valley call for the establishment of a staff
of experts with unquestionable credentials in
that excellent fruit section of the province. It
is difficult to-day to convince discerning visitors
from other prosperous fruit countries that there
is not in the province even an official entomol-
ogist. The time is at hand when the Okanagan
Valley will discard the characteristics of youth
and inexperience, and abandon the illusion
hugged so closely in some quarters that she is
endowed specially by Providence for fruit-cul-
ture without effort. *Absit invidia.* The fortun-
ate conditions which have allowed hitherto even
orchards neglected by man to produce good
fruit, are passing away. The marvellously fer-
tile soil and the climate have proved their
potentialities; it is left for man now to prove
his power. If the growers' efforts are guided
on the right lines, the prospects of this beautiful
valley as a producer of hardy fruits are unsur-
passed upon the continent.

INSPECTION AT COAST

Fruit growers in British Columbia should con-
tinue to protest to their provincial government
in regard to the discrimination against eastern
nursery stock that is practised by the officials
of that province. The matter should not be
allowed to drop until there is an inspection sta-
tion at Revelstoke or Golden. The present in-
spection and fumigation station is located at
Vancouver. Growers in the fruit districts of
the eastern side of the province suffer many
disadvantages when they buy trees from Ontario
or elsewhere in Eastern Canada.

First of all, the British Columbia government,
by compelling eastern nursery concerns to ship
stock through to Vancouver for inspection,
makes it almost impossible for the eastern con-
cerns to have their stock delivered to the grow-
ers in perfect condition. The unnecessary delay
caused by the stock having to cross the province
to Vancouver, from which point it has to be
shipped back almost to the original point at
which the goods entered the province, is un-
reasonable and anything but good for the stock.
In the case of perishable goods, the delay often
proves disastrous. Owing to the exorbitant
freight rates in the west, the freight on goods
shipped in this way, is almost double what it
would be were they shipped direct to the grow-
ers, so that instead of being a benefit to the Brit-
ish Columbia fruit grower, the lack of a station
on the eastern border of the province handicaps
him, as eastern stock is excluded almost entirely
from the province, for it is almost impossible for
him to import under anything like reasonable
conditions.

Most British Columbia fruit growers of the
interior parts of the province, such as the Okana-
gan Valley, Kamloops and Nelson district, and
also in the Columbian Valley, want eastern
grown stock. Much of the stock in the east,
particularly that from the Niagara district, is
grown under climatic conditions almost identical
to those of their own districts, whereas the trees
that are shipped in by the coast and Washington
and Oregon concerns are grown under largely
different conditions. In the interior parts of
British Columbia, they have some winter, and
consequently must have trees thoroughly hard-
ened and matured in order to stand the climatic
changes. Trees at the coast, however, are
grown where there is practically no winter.
Trees grown under these conditions make a soft
and pithy growth, and often winter-kill or be-

come black-hearted, and at best are but short-
lived. It is, therefore, the British Columbia
fruit growers' wish that eastern stock be allowed
to come into their province, under the same con-
ditions as stock from the Washington and Oregon
concerns, which would be the case were a station
established at the eastern border of the province.

We can show numerous letters from the most
prominent fruit men of British Columbia, show-
ing that eastern trees are wanted. In fact, the
orchards that are now in bearing and are bring-
ing profitable results to the growers, and that are
producing fruit that is making a name for Brit-
ish Columbia, are grown from eastern trees;
they have proved, in every respect, better.
The growers are able to secure a much larger list
of varieties from the east and, also, larger and
older trees. Under present conditions, however,
they are almost compelled, by the provincial
government laws, to buy their trees from a
foreign country; trees which, in many cases, are
utterly unsuited for their own districts. There
are, it is true, some small coast concerns in Brit-
ish Columbia that have probably excellent
stock, but only a small list of varieties to choose
from.

Indignation meetings have been held in vari-
ous parts of the province, and this spring resolu-
tions were passed by different local associations,
as well as by the British Columbia Fruit Growers'
Association, petitioning for the establishment of
a station at Revelstoke. The Board of Horticul-
ture at Victoria, while agreeing that it would be
a most desirable thing for these growers to have
a station in the east, claimed that in recent
years the imports from the east have fallen off
fully seventy-five per cent., and that it would
not pay them to establish a station in the east.
A poorer excuse could not be given. The only
reason for the falling off of eastern importations
is due to the passing of this unjust law discrim-
inating against eastern concerns. Were con-
ditions reversed and the inspection station estab-
lished at Revelstoke or Golden, and the Wash-
ington or Oregon concerns compelled to ship
their stock to Revelstoke to be examined, it is
safe to predict that the Washington and Oregon
concerns' trade would fall off fully seventy-five
per cent. and the trade from the east increase
several hundred per cent. As a few hundred
dollars would erect a shed sufficient to serve the
purpose of an inspection and fumigation station
in the meantime, the excuses given do not hold
water. In view of the repeated requests made
by the fruit growers of British Columbia, it is to
be hoped that the provincial government will see
its way clear to establish an eastern inspection
and fumigation station at an early date.

A HEAVIER PENALTY NEEDED

The need for a revision in the Fruit Marks
Act which will make it possible to deal more
severely with packers who habitually defy the
law, becomes more apparent every year. As it
is, the heaviest fine that can be imposed is 25
cents to \$1 a barrel. It has been found that this
fine is not heavy enough to deter fraudulent
work on the part of some shippers who consign
large quantities of fruit every year to the Old
Country. Some of these men have been fined
repeatedly, but continue to resort to false pack-
ing. They believe that they can make more
money by shipping second grade fruit as finest,
than they are in danger of losing on the com-
paratively small number of falsely packed bar-
rels of fruit on which they may be fined.

It is seldom that a man can be caught with
more than 25 barrels of wrongly marked fruit in
his possession. In such a case, the fine cannot
exceed \$25. In the warehouses, barrels that
have been falsely packed are not marked until
shortly before they are shipped. It is seldom
that the inspectors can catch the fruit just as it
is being put on the train. At Montreal, the
inspectors are unable to inspect more than five
or six barrels an hour. While these are being
inspected, three or four carloads of apples may

be loaded on the steamers, and thus are never inspected.

Provision should be made that where a shipper has been convicted, on several occasions, of fraudulent work, the fine imposed should be sufficient to deter further practices of that nature. It might be well, even, to make imprisonment of such offenders possible. The Department of Agriculture would do well also to publish the names of all parties convicted twice in the same season of fraudulent packing.

A SHARPER CAUGHT AGAIN

Some weeks ago considerable attention was drawn to the case of an Ontario apple shipper who was detected by the Dominion Department of Agriculture in an attempt to re-mark, fraudulently, barrels of apples just before they were placed on board at Portland, Me. Recently the same offender was caught in another piece of sharp work. One of the Dominion fruit inspectors examined his fruit in his warehouse and passed it as having been correctly marked. Suspecting, however, that an attempt might be made to re-mark these barrels, the inspector in question boarded a passenger train and reached Montreal before the fruit had arrived.

The inspector waited in the Grand Trunk yards, and when the train with the fruit arrived, he found that the cars containing the barrels were occupied by a man who had re-marked the barrels while they were in transit. The result was that the Department took action and the offender was fined \$80 and \$40 costs. This is the first occasion upon which action has been taken under the Fruit Marks Act for changing marks. The packer in this case has been convicted four times this season for breaking the Fruit Marks Act.

A great mistake is made by some British Columbia fruit growers in trying to ship their fruit too ripe. California found out, many years ago, that a critical stage to pick was when the fruit had its full color and tasted natural. They soon found by experience, when the fruit was past the "green" taste, and the seed of apple, pear or peach was past the "milk" or slightly cream, the fruit was fully matured, and could be depended on to "carry" a long way. Orchard foremen do naught but see to the time of picking at the proper stage; by tasting, cutting and inspecting every day, till a certain stage is reached. Their knowledge to the shipping public has placed California fruit on all marts of the world. Many an orchardist of the west and middle west of the United States has found ready employment in this special line in the great fruit belts of the coast and interior British Columbia. Local fruit growers who now ship too ripe, should follow the teachings of these men and, thereby, help to raise the standard of that portion of British Columbia fruit that is not up to the plane that the province is striving to attain.

Since last fall, the work of inspecting the fruit that passes through the port of Montreal for export has been done more thoroughly than ever before. The work has been under the direction of Mr. M. R. Baker, one of the Dominion fruit inspectors, who is deserving of much credit for the improvement that has taken place. Last fall the method of inspecting the fruit was largely reorganized, more attention being given to the inspecting of the fruit that passed through the city during the night. The result is that the number of inspections made has shown an increase of over one-third more than the best year since the Fruit Marks Act came into force. Fruit passing through Montreal at night, now, is as likely to be inspected as that loaded on the steamers during the day. This is as it should be.

THE CANADIAN HORTICULTURIST is a national publication, not local. Its articles are prepared for the horticulturists of all Canada.

In every issue may be found articles and news notes from writers in each province of the Dominion. This issue contains many articles of particular value to the fruit growers of British Columbia. All persons interested in the fruit industry of that province are invited to subscribe. The price is only fifty cents a year.

Our Loss is Their Gain

It is announced that Prof. F. C. Sears, horticulturist at the Agricultural College, Truro, N.S., has been appointed professor of pomology at the Massachusetts Agricultural College, Amherst, Mass. The news will be received with regret by the horticulturists of Canada, particularly those in Nova Scotia, as Professor Sears has many friends, and has done excellent work in that province.

About 10 years ago he was offered and ac-

cepted the position of director of the Nova Scotia school of horticulture, supported by the provincial government. He conducted this school very ably up to the time of its merger with the Nova Scotia Agricultural College at Truro, when he became professor of horticulture of that institution. His work has been along broad lines, teaching, experimental work and extension work, and as Nova Scotia is a great fruit district, especially in the apple line, he has become very proficient and expert on pomological lines. He is regarded as a prominent authority by the people connected with the departments of agriculture in Washington and in Canada, and the trustees of the Nova Scotia agricultural college offered him a raise of \$500 in salary to stay with the provincial institution. Canadians hope that Professor Sears will reconsider the matter and remain on this side of the line. His services are needed in the development of Maritime horticulture.

The Niagara Experiment Station

THE newly-appointed director of the Horticultural Experiment Station at Jordan Harbor, Ont., is H. S. Peart, B.S.A., late lecturer in horticulture at the Ontario Agricultural College, Guelph. Mr. Peart was born at Nelson, Ont., near Burlington,



H. S. Peart, B.S.A.

and is a son of Edwin Peart, a well-known general fruit grower of that locality. Director Peart is a cousin of A. W. Peart, provincial fruit experimenter for the Burlington district, and a director of The Horticultural Publishing Co. He lived on the fruit farm of his father until 1899, when he undertook a course at the O.A.C., Guelph, specializing in horticulture and graduating in 1903. Immediately after graduation, he was appointed assistant in horticulture at the same institution, succeeding A. B. Cutting, B.S.A., now horticultural editor of THE CANADIAN HORTICULTURIST. Mr. Peart filled the position with credit until his appointment to Jordan Harbor, June 1, 1907. With the support of the fruit growers of the province, Mr. Peart will endeavor to work out many perplexing problems that can be solved only by the patient, accurate application of science with practice and by the earnest cooperation of all persons concerned.

The work this season at the Horticultural Experiment Station at Jordan Harbor, Ont., will be mainly constructive. Between 10 and 11 miles of tile drain will be laid. An office and workbuilding and the director's residence will be

erected. The work of clearing the land, which was started one year ago, will be continued and the experimental blocks laid out.

Some variety tests of vegetables have been undertaken to form a basis for selection work next season. Peas, beets, carrots, onions, spinach and corn are already planted. A few late potatoes will be set and given different cultural treatments. A small strawberry plantation will be put out to form a nucleus for succeeding years.

In an apple orchard, some 30 years old, a tillage experiment will be started. About one-third of the sod was broken last autumn. About one-third has been plowed this spring. The balance will be left in sod. The two plowed sections will receive the same tillage up to about July 15, when one-half of the spring and one-half of the fall-plowed sections will be sown with a cover crop; the remainder will be given clean tillage. This should form a valuable object lesson to illustrate the advantages or disadvantages of the various methods.

Some work at reclaiming the lake bank is being undertaken. The station hopes to be able to give some assistance to the residents along the lake who are face to face with the washing-out problem.

It is the intention of Mr. Rittenhouse to macadamize the road and lay a four-foot concrete pavement on the township line, which lies along the eastern boundary of the place. This will add materially to the value of the property and will afford an excellent object lesson for visitors.

Mr. Jas. Johnstone, who is president of the British Columbia Fruit Growers' Association, was instrumental in pioneering the growing of fruit in Kootenay and of bringing the great excellence of that district to public notice. He has filled many important offices, among them president of the Nelson Agricultural and Industrial Association and of the Kootenay Fruit Growers' Association. He is now president of the newly formed Fruit and Produce Exchange of British Columbia, which has for its chief object the distribution of all fruit in the province from a central office, so as to prevent the different local associations from sending too much fruit into any one market at one time; in fact, the even distribution of British Columbia fruit throughout the provinces of the west from Winnipeg to the Pacific coast. This is one of the most forward movements ever made in the fruit industry in any country. A portrait of Mr. Johnstone appears on page 179.

One Maynard plum tree, worth \$1.50, sent prepaid to every reader who will send us one new subscription to THE CANADIAN HORTICULTURIST at 50 cts. See our offer on page iv.

Cooperative Fruit Growers Meet

AT the annual convention of the Ontario Cooperative Fruit Growers' Association, held in the offices of THE CANADIAN HORTICULTURIST, Toronto, on June 11 and 12, the name of the organization was changed to The Cooperative Fruit Growers of Ontario. The meeting was attended by representatives from about 20 affiliated associations, and resulted in the transaction of much business of value to the cooperative movement. Those present included: A. E. Sherrington and W. A. Rowand, of Walkerton; D. Johnson, Forest; W. H. Dempsey, Trenton; Robt. Thompson, St. Catharines; W. H. McNeil and H. Wilson, Oakville; Elmer Lick, Oshawa; N. A. Graham, Ivan; W. H. Gibson, Newcastle; A. R. Siple, Burgessville; Wm. Leary, Parkhill; F. J. Barber, Georgetown; J. G. Mitchell, Clarksburg; Adam Brown, Owen Sound; B. J. Hamm, Orono; Chas. F. Miller, Nelson; C. W. Gurney, Paris; J. A. Webster, Sparta; H. B. Cowan, of THE CANADIAN HORTICULTURIST; P. W. Hodgetts, Secretary of the Ontario Fruit Growers' Association; and A. B. Cutting, Toronto. The old board of officers was re-elected, as follows: Pres., A. E. Sherrington, Walkerton; 1st vice-pres., D. Johnson, Forest; 2nd vice-pres., W. H. Dempsey, Trenton; 3rd vice-pres., Robt. Thompson, St. Catharines; sec.-treas., A. B. Cutting, Toronto. Mr. Elmer Lick, of Oshawa, was appointed auditor.

Among the important questions discussed was the advisability of placing one or more men in the west to represent all the associations. The strong need for such was pointed out, but it was thought that the organization was not yet sufficiently well established to warrant such action. It was decided to undertake a system of extensive advertising to bring the associations into closer touch with western buyers; also to secure one or two established persons or firms in the west to handle the fruit of those local associations that desire to place a portion of their output in such hands. For the purpose of assisting newly formed and small associations in the disposal of their fruit, one or more persons directly connected with the cooperative movement will be appointed in Ontario as salesmen for those associations that require such services.

A resolution was passed asking the Dominion Government to assist in restoring the German fruit market to Canadian products. Another asked for a third Dominion Fruit Conference in 1908. One was passed regarding various features of the transportation of fruit, including demurrage of cars, stop-over privileges, facilities for shipping and so on, the same to be laid before the Railway Commission. Another resolution dealt with the practice of making vinegar with acids as being detrimental to the business of making apple cider.

The affiliated associations decided to raise funds to carry on the work of the central organization more extensively than was done last year. A uniform brand, to be used by all affiliated associations that pack their fruit in accordance with the standard that is recognized by the central organization, will be adopted. The local brands will not be done away with but will be strengthened by the use of a small uniform brand to indicate affiliation with the provincial association.

A resolution was passed requesting the Dominion Minister of Agriculture to take such steps as may be necessary to insure the fruit packed by the affiliated associations receiving close and frequent inspection at the hands of the inspectors of the department and that the inspectors be authorized to give such assistance and advice as lie within their power to assist in securing uniform packing of fruit and further, when any local association has been convicted for a second time of fraudulent practices, that it be expelled from the association.

A deputation made up of the executive committee of the Cooperative Fruit Growers of

Ontario waited on Hon. Nelson Monteith, Minister of Agriculture, and requested the appointment of instructors in fruit packing, orchard management and organization of cooperative associations. Such an instructor will do much to improve the methods of producing fruit and preparing same for market. The Minister gave assurance of assistance at an early date.

All affiliated associations will receive each week, as they did last year, advices on crop conditions and prices throughout Canada and the United States and, as far as possible, in other countries. This feature of the work alone is well worth the price of membership in the central association. All local associations not yet affiliated are asked to join as soon as possible. The cooperative movement in itself is an important one. The cooperation of cooperative societies is a step still further in advance. Local associations all over the province should take advantage of it. For particulars write to A. B. Cutting, sec.-treas., The Cooperative Fruit Growers of Ontario, 507 Manning Chambers, Toronto.

The Late Robt. Hamilton

In the death of the late Rev. Robt. Hamilton, of Grenville, Que., horticulture in Canada loses one of its most enthusiastic adherents. Over 30 years ago, Mr. Hamilton came to Grenville, as the pastor of St. Fillan's Presbyterian Church. All his life he was a student and practical worker in botany, seed growing and general horticulture. While at Grenville, he continued this work on a small farm which he purchased, and there established what is now one of the finest orchards in the province of Quebec. He gave particular attention to the selection and culture of apples.

When the present Dominion Government extended the system of exhibitions throughout the world, Hon. Mr. Fisher chose Mr. Hamilton as superintendent of Canadian fruit exhibits at the several exhibitions held at Paris, Glasgow, Japan, St. Louis, and at Liege in Belgium. It was at the latter place that the disease which finally terminated his life first manifested itself in the form of neuritis. Gradually the disease progressed until finally acute paralysis ended his life in Montreal. The funeral was largely attended by many friends of the deceased, among whom were Hon. W. A. Weir, Minister of Public Works; John D. Hains of Montreal, and many others from a distance. The late Mr. Hamilton was 69 years of age, and leaves a widow and one daughter to mourn his loss.

Items of Interest

This season the Woodstock Horticultural Society has been active in doing much work of value to that city. The distribution of premiums among the members has been exceptionally heavy, and included 119 fruit trees, 210 rose bushes, 48 lily bulbs, 60 tuberous begonia bulbs, 24 cannas, 25 peonies and a number of other plants. About 250 packages of aster seeds were distributed among the school children.

In June, Wm. Hunt, of the O.A.C., Guelph, visited Stratford, London, Tillsonburg and Port Dover, and addressed about 3,000 school children, as well as the horticultural societies of those places.

The first irrigation convention covering the provinces of Saskatchewan, Alberta and British Columbia will open in Calgary on July 17. Among the questions that will be discussed are: "Forestry as applied to irrigation," "Extension of surveys, in connection with irrigation, having particular reference to gauging of streams and location of reservoir sites,"

"Agricultural and horticultural experiments and the use and duty of water on irrigated farms," "The industrial development following the work of irrigation," "Laws relating to the use of water and the administration thereof." All who are interested in the utilization of the great national resources of Western Canada are invited to attend.

The members of the Toronto Horticultural Society purpose holding their annual excursion to Queen Victoria Park, Niagara Falls, on July 4. Reduced rates have been arranged for and a pleasant outing is anticipated.

The Canadian commercial agent at Manchester, Eng., P. B. McNamara, reports that severe frosts did enormous damage to the Damson trees at Cheshire. Thousands of trees will not bear any fruit, and Cheshire Damsons will therefore be scarce again.

Reports from various commercial centres in England state that British Columbia fruit was well received, and paid for in those markets during the past winter. This is evidence that the effort being made by British Columbia growers to grow and pack fruit of the highest quality is being rewarded.

The British Columbia Fruit and Produce Exchange, that was organized recently, is a step in advance in the fruit industry of that province. It should be of much value in the handling of British Columbia's great fruit products.

The Biological Department of the Macdonald College, St. Anne de Bellevue, Que., purposes carrying on extensive experiments in the study of potato diseases.

The Deputy Attorney-General for Ontario, Mr. R. Cartwright, has notified H. B. Cowan, the secretary of the Ontario Vegetable Growers' Association, that the Attorney-General's department has received word that the charges that the Canadian Cannery, Limited, are a combine in restriction of trade, will be investigated before long in connection with the investigation that is now before the courts of the Grocers' Guild at Hamilton. Specific charges were made against the Canadian Cannery, Limited, recently by *The Toronto News*, to the effect that it was a combine in restraint of trade, and that it controlled the prices at which the wholesalers purchased their goods as well as the prices paid the growers for their products. These charges were referred to the branch associations of the Ontario Vegetable Growers' Association, which reported in favor of the Ontario Vegetable Growers' Association, asking the Attorney-General's department for an investigation. This was done with the foregoing result.

Weeds in Lawns

Ed. THE CANADIAN HORTICULTURIST: In referring to weeds in lawns you state in your June issue that the only way to get rid of dandelions is by spudding. This was tried by dozens of people here, but had no effect; the roots broke off and the appearance of lawns was destroyed. If there are any practical demonstrations here of your theory would like to run across them.—R. S. Steele, Hamilton.

[NOTE.—It is almost impossible to rid a lawn of old, large-rooted dandelions without injuring the appearance of the turf. For this reason, these weeds should be removed the first fall or following spring after their appearance by spudding, as was suggested in the article referred to. When this has been neglected and the lawn becomes overrun with dandelions, the only practicable thing to do is to renew the entire turf or that portion affected by plowing or digging, fertilizing with commercial fertilizers or very clean manure, and re-seeding with clean grass seed.—Editor.]

The Prospects for a Fruit Crop

REPORTS from the fruit districts of Canada indicate that growers are expecting a good crop of most kinds of fruits. The following information from crop correspondents of THE CANADIAN HORTICULTURIST point out the situation in the leading localities:

YALE AND CARIBOU, B.C.

Spence's Bridge.—The spring was favorable for fruit. There will be a good average crop of apples, cherries and plums.—A. Clemes.

Kamloops.—The fruit yield will be light owing to the severe weather of the past winter, which was the coldest experienced in this district for 20 years.—A. E. Meighen.

Enderby.—Pears and apples will yield a heavy crop. Plums and cherries fair.—W. L. Allan.

Peachland.—Last winter was a cold one for this section, yet there is a show for a good crop. We expect a fair to good crop of peaches, apples, pears, plums and cherries. Raspberries are showing well.—C. Aitkens.

GREY COUNTY, ONT.

Owen Sound.—There was an excellent bloom and indications point to a good crop in all lines of fruit.—Adam Brown.

Clarksburg.—The prospects for a good crop are all. Spys probably will yield about two-thirds crop.—J. G. Mitchell.

LAMBTON COUNTY, ONT.

Forest.—The prospects for apples are exceptionally good. They blossomed well, and the weather has been favorable for the setting of fruits. Plums and peaches also promise well; raspberries, only fair; and strawberries, almost a total failure.—D. Johnson.

ESSEX COUNTY, ONT.

Ruthven.—Fruit prospects are not promising. Late frosts practically ruined the early strawberries; late varieties will be fair; raspberries, fair. Cherries bloomed nicely, but did not set well. The peach crop will be short, as many trees were winter-killed. Pear trees look well, but are not heavily loaded. Apples alone promise an abundant crop. Tomatoes are backward.—J. O. Duke.

ELGIN COUNTY, ONT.

Sparta.—Everything was well loaded with blossoms, except Baldwins and they were bare.—J. A. Webster.

OXFORD COUNTY, ONT.

Burgessville.—The prospects are good for fruit trees in general. On apple trees there was at least a two-thirds bloom. Growers anticipate a good harvest. Plums, cherries and pears also look well.—R. A. Siple.

WENTWORTH COUNTY, ONT.

Winona.—There has been a very heavy bloom on all apple trees. Pears bloomed well, but are not setting satisfactorily; some varieties are very light. Plums promise a full crop

except the Japan varieties, some of which will be a failure. Peaches will give a good crop, although some trees are winter-killed. Cherries will be light, especially the sweet ones. Grapes wintered well, but are backward. Strawberry crop is medium; canners are offering \$1.70 a 24 quart crate. Raspberries, medium, \$1.75 a crate.—Murray Pettit.

Bartonville.—The raspberry crop will be light. Strawberry acreage is small, but the beds are looking well. The outlook for a general crop of fruit is quite favorable.—Thos. Tregunno.

Hamilton.—The strawberry crop will not be large; price \$2.00 a crate of 24 boxes. The raspberry crop will be short and the price high. Cherries, plums, pears, currants and gooseberries promise a good crop. Peaches are dropping badly, and indications point to a light crop. The grape prospects are for a heavy yield.—Jas. A. Stevens.

BRANT COUNTY, ONT.

Paris.—The bloom indicated a fair crop, but it is too early to predict.—C. W. Gurney.

HALTON COUNTY, ONT.

Oakville.—Prospects are good for a large crop in the tree fruits. Gooseberries and currants will be light.—W. H. MacNeil.

Georgetown.—There was a splendid show of bloom on all kinds of fruit trees. We anticipate a good crop of apples. Considerable interest is being taken in the cooperative movement.—F. J. Barber.

PEEL COUNTY, ONT.

Clarkson.—Cherries, plums and pears are setting well and indicate a good crop. Apples also promise well. The strawberry crop promises to turn out fair to very good. Raspberries will be only medium. The prospects are good for blackberries, gooseberries and currants.—W. G. Horne.

DURHAM COUNTY, ONT.

Newcastle.—Prospects are promising for a large crop except in those varieties that bore heavily last year. Raspberries were partly winter-killed, but will yield a fair crop. Cherries, plums and pears were full of blossoms.—W. H. Gibson.

HASTINGS COUNTY, ONT.

Trenton.—The bloom on fruit trees indicated a large crop of most fruits. Japanese plums will be a total failure and also some varieties of the European type.—W. H. Dempsey.

GRENVILLE COUNTY, ONT.

Maitland.—Early and fall apples bloomed heavily; Fameuse, in particular, had a full bloom with perfect weather for fertilization, and have set a full crop. Winter apples are light, but they do not figure largely in this section. Pears and plums will be light; what few cherry trees there are promise a full crop.—Harold Jones.

Ontario Vegetable Crops

ALTHOUGH the season is backward, growers expect a fair to good crop of most vegetables. The fine growing weather during the latter half of June has brought the crops along rapidly. The situation in the various districts is mentioned in the reports of crop correspondents of the Ontario Vegetable Growers' Association, as follows:

OTTAWA DISTRICT

Billings Bridge.—The usual crops are being grown. The acreage of tomatoes and melons will be double that of last year. Asparagus has been plentiful. Rhubarb has been a glut. Green onions were plentiful.—T. Mockett.

LENNOX AND ADDINGTON

Napanee.—Potatoes planted extensively, are three weeks late, and have come up unevenly;

prospects are for half a crop. Maggots are affecting seed onions badly.—E. M. Sherman.

TORONTO DISTRICT

Humber Bay.—Early sown roots, such as beets, carrots, and parsnips, came up unevenly owing to the long cold weather. Seed onions also are thin and not so many sown as in past years. Some large patches of Dutch set onions have been planted; they are an extra good crop. Transplanted onions have just begun to grow. Transplanted beets are about ready for market. Cabbage and cauliflower look fairly well. Celery is growing slowly. Beans came up poorly. Corn on light soil looks well; on heavy soil almost a failure. Spinach is a good crop but poor sale. Radishes are plentiful. Outside lettuce is coming in with prices lower than usual.—J. W. Rush.

Doncaster.—Crops are two weeks late. Some onions and parsnips had to be re-sown on account of a poor catch. Rhubarb is not plentiful; price has kept up. Tomatoes were put out about two weeks later than usual and probably will give the greenhouse crop a better show.—Gibbard.

PEEL COUNTY

Clarkson.—Early potatoes are looking well. Onions planted on light soil have dampened off considerably, on heavy soil look well. Early corn is backward. Tomatoes and early cucumbers are looking fairly well. Early melons have felt the cold winds and look a bit yellow; a bad sign.—W. G. Horne.

HALTON COUNTY

Burlington.—The acreage of onions is slightly larger than last season. Early cabbage looks fine; cutting commenced last week. Tomatoes, peppers, egg plants and melons have made little growth but are improving. Early potatoes, peas and beans are doing well. Table carrots, parsnips and beets were planted lightly but are looking well. Wireworms have been rather destructive, especially on onions and melons.—J. A. Lindlay.

HAMILTON DISTRICT

Beans, peas, potatoes and corn are doing nicely. Owing to scarcity of potatoes there has been a good demand for early spring truck and prices have remained firm for asparagus, lettuce and onions. Tomatoes will not be a heavy crop; growers are expecting higher prices than last year. The acreage of potatoes is 20% increased.—Jas. A. Stevens.

Bartonville.—New beets are coming in plentifully and selling at 60 cents a doz. Early cabbages are bringing 75 cts. to \$1 a doz.—Thos. Tregunno.

KENT COUNTY

Chatham.—Everything is backward. Radishes are coming in in fair quantities. Onions are somewhat scarce. The acreage of Dutch sets is larger than usual, and probably there will be a good supply. The acreage of tomatoes is about the same as in past years. Early potatoes are backward; old stock is scarce at \$1.25 a bag.—Fred. Collins.

WELLAND COUNTY

Niagara Falls South.—Vegetables are growing fast and making up for lost time. Beans are looking fine, though late. Melons, squash and cucumbers are just beginning to grow nicely. Corn will be a month late. Indications point to a good season although two or more weeks behind.—Thos. R. Stokes.

ESSEX COUNTY

Leamington.—Cabbages are growing well and will be on the market about July 1. Early tomatoes were held back but are now doing fine; they will be three weeks late. Hot-house cucumbers are selling at \$1.60 a 11-quart basket; there are not enough to supply the demand, and some are coming in from Boston.—E. E. Adams.

LAMBTON COUNTY

Sarnia.—Vegetables are doing well except tomatoes. There is about the average acreage; potatoes are 10% to 20% above. Some patches of seed onions have been damaged by wireworms.—W. A. Broughton, Sarnia.

Reliable in Emergencies.—Mr. L. Strother, 92 Crescent Road, Toronto, Ont., Canada, writes under date of Mar. 26, 1907: "I have been using Absorbine for the past year or more, and find it everything that can be desired for soft swelling such as wind puffs, capped hocks, thoroughpins and strains." Many customers write of the satisfactory results Absorbine gives in removing blemishes, curing lameness, etc. You try a bottle. Price \$2.00 at druggists or delivered. Manufactured by W. F. Young, P.D.F., 194 Monmouth St., Springfield, Mass. Canadian Agents, Lyman Sons & Co., Montreal.

NOTES FROM THE PROVINCES

By our Regular Correspondents and Others

Prince Edward Island

Rev. Father Burke, Alberton

The extraordinarily remarkable conditions for the spreading of orchard pests last year, will make this season an active one for the orchardist. The oyster-shell bark-louse is very prevalent. The whitewash process is being used for its destruction. Many applied the pure lime wash; while this remedy is helpful when applied in November, it is not likely to rid the trees of the pest when applied in spring. Rains remove it too quickly. Whilst there are a few indications of mice ravages, we are not apprised of any considerable damage.

Considerable new planting is being done. We have every hope in the business. In the meantime, spray, spray, spray.

Quebec

Auguste Dupuis, Director, Fruit Stations

Although the blooming of fruit trees in eastern Quebec is 19 days later than last year, it is very promising. Cherries, plums, and apples make a good show, excepting Fameuse, Alexander, Duchess and Russets. According to reports received from several counties, the cloudy cold weather and occasional rain in May and the first 10 days in June, have been most favorable to trees planted this spring.

Small fruits of all kinds are in the best condition generally, but specially promising in the fields and gardens near Quebec city. Market gardeners have suffered considerably by the heavy frosts of the first days in June; their tomatoes and other tender vegetables were destroyed.

British Columbia

C. P. Metcalfe, Hammond

The weather has been exceedingly dry and drought has done little to help the frost-injured crops along. Strawberries are in full swing, but the crop will be a light one, probably not more than 50%. Raspberries are showing poorly, the dry weather causing the frost-injured canes to turn yellow. Blackberries promise a medium crop. Both apples and pears will average a fair crop, some varieties being heavily loaded and others light. Prunes will be a lighter crop than last season.

Proper and frequent cultivation is one of the most important details of orcharding. Most fruit growers hoe and cultivate only when necessary to keep the weeds down, and pay little attention to the loss of moisture. In dry spells, instead of paying particular attention to the retention of moisture in the soil by keeping the surface from crusting with a dust mulch, they allow the cultivations to become less frequent because the weeds do not thrive any better than the trees from lack of water.

Owing to the limited number of nurseries and the rapid growth of the fruit growing industry in this province, fruit growers have had to import most of their nursery stock from the eastern provinces and from the United States. All imported stock has to pass through the fumigation station, and be subjected to examination. If found infested with insect pests or fungous diseases it is destroyed, and the apparently clean stock is fumigated. Now, many of the fruit growers are complaining that the fumigated trees seem to have very little vitality left and some are killed outright.

A provincial cooperative association is be-

ing formed, and is seeking incorporation, for the handling of the fruit and produce of the province, composed of the local associations. The following have joined: Kootenay, Revelstoke, Salmon Arm, Kamloops and Chilliwack, and others have signified their intention of doing so. One rule governing the association is as follows: Each local union, or exchange, shall subscribe for two shares for the first 50 members or fractional part thereof, and an additional share for each additional 50 or fractional part thereof. The idea is to control the output of the local associations under one management. The scheme is perhaps a little premature, as the local associations and fruit growers of the province are hardly educated in the benefits of thorough cooperation, but it is a step in the right direction.

Montreal

E. H. Wartman, Dominion Fruit Inspector

Cherry, plum and apple trees on the island of Montreal bid fair for a crop. The way in which California fruits are appreciated in this city was told on Friday, June 14, by the prices paid for the first car of California apricots, peaches and plums. Apricots sold at \$2 a crate of 12 quarts. This figure means over \$5 a bushel. Peaches brought the same price. Plums, being less numerous in packages, went as high as \$3.55, which is over \$9 a bushel. In years gone by, it was a common occurrence to buy any of these fruits in California for one cent a pound, or 60 cents a bushel for canning. This leads one to believe that some person is making money out of them. This car arrived in excellent condition, and must have been very gratifying to Hart and Tuckwell, who are the agents of the Earl Fruit Co.

Strawberries have been coming in in fair quantities. The Maryland strawberry boxes hold, when level full, 56 cubic inches. The fruit weighs about one pound, two ounces. The man is a hero who ventures to pay \$2,000 for a car of fruit so perishable in its nature. The quality of Maryland berries, and the manner in which they are crated are a credit to that noted berry state.

In many cases, Ontario berries arrive too slack. Purchasers some times have to take 10 boxes out of 60 to fill the balance properly. This calculation has to be made by a shrewd buyer, or he will be out on the deal. To be an all-round expert on fruits and fruit packing, one should see the systems of packing from other countries, and then couple this with his own experience and ability.

Southern Ontario Apples

Editor, THE CANADIAN HORTICULTURIST.—Your readers in southern Ontario will have read the interesting letter on "Apple Growing," by James E. Johnston, Norfolk County, in the May number. With this letter I heartily agree, except upon one point; and even on this one point, namely, the keeping qualities of the southern-grown winter varieties, Mr. Johnston and I are at one practically. No finer apples are grown in the world; few trees are more prolific, and I quite agree with Mr. Johnston that if proper care is taken of the apples, they can be kept fairly well into the winter season; but as a matter of fact, neither farmers nor apple buyers will go to the trouble of taking proper care of these apples, and consequently

there is a comparatively poor market for these apples when northern grown fruit of the same varieties of no better flavor, and not so good looking, are selling at high prices. These are facts that can be verified by hundreds in southern Ontario as well as by the apple buyers.

Under the circumstances I could not agree with Mr. Johnston when he recommends the planting of Baldwins, Spies, Kings, and Russets. Why grow these apples and sell them for a mere pittance! A Brighton buyer reports that he bought several thousand barrels of these winter varieties in the neighborhood of the town of Simcoe, Norfolk County, at 50 cents a barrel last year. Of course Mr. Johnston says very truly, that if proper care had been taken of these apples; if cooperative associations had been formed and cold storage plants established, these apples could have been doubled or trebled in value; but the same care bestowed upon Duchess and Wealthy would certainly yield much larger profits.

Nature has marked out southern Ontario as the early fruit region of Canada, and the area of this early fruit region is comparatively limited. Why then should this early fruit area attempt to compete with the late fruit area that is almost unlimited? My advice to the fruit growers of southern Ontario is to follow the teachings of nature and of experience, and devote themselves to the early and tender fruits and avoid as far as possible competition in late fruits.—A. McNeill, Chief, Fruit Division, Ottawa.

Gardening in Vancouver

M. J. Henry

Ornamental gardening in Vancouver is becoming an established fad. Very few new residences are built without the owners investing from \$5 to \$200 in ornamenting their grounds.

Jobbing gardeners are rushed with work, and command from 35 to 40 cents an hour, and some of them more. A few years ago the owners employed white gardeners to lay out their grounds and then had the work finished with cheap Chinese help. To-day "John" has got on to the job, and wants "allee samee" white man's pay.

Two Leading Societies

The two largest horticultural societies in Ontario are located in Ottawa and St. Catharines. Considering the population in its vicinity the St. Catharines society leads all the others in the province as regards the largest proportionate membership. The Ottawa society started out at the beginning of the year with an ambition to secure 400 members. It already has obtained about 350.

The St. Catharines society already has over 300, and is fast increasing its membership. It is not unlikely that the St. Catharines society by the end of the year will lead all the other societies in the province. This speaks well for the work of Mr. W. B. Burgoyne, the president of the Ontario Horticultural Association, who is also the president of the St. Catharines Horticultural Society, as well as for the work of his capable board of directors, and specially the secretary, Miss L. A. Radcliff.

The increasing demand for perfect fruit has caused fruit growers to give greater care to the picking of the fruit. No other device is as necessary as a ladder that is light, easily adjusted, and strong. Many fruit growers have expressed themselves in the highest terms of the ladders manufactured by the Berlin Woodenware Co. of Berlin. The new illustrated booklet just issued by this firm contains a full description of the goods they manufacture, and it is well worth writing for.

British Columbia Fruit Growers' Association

W. J. Brandrith, Secretary-Treasurer

THE British Columbia Fruit Growers' Association was organized on Feb. 1, 1889, the officers elected being: J. M. Browning, C. P. R. Land Commissioner, president; Thos. Cunningham, 1st vice-president; C. W. Henry, 2nd vice-president; and A. H. B. Magowan, secretary-treasurer. The object of the organization was to encourage the cultivation of choice fruits, flowers and vegetables. This was done by means of competitive exhibitions held alternately at Vancouver, New Westminster and Victoria and by the reading of papers and the delivery of addresses at quarterly meetings. Later, the flower and vegetable parts were dropped, and the marketing of fruit included in the objects of the association.

To encourage the cultivation of choice fruits,



Mr. James Johnstone

President, British Columbia Fruit Growers' Association addresses are given by practical men at meetings held yearly in the principal fruit growing centres. Last year 21 of these meetings were held, in addition to the regular annual and quarterly meetings. At these meetings, practical demonstrations in the best methods of planting, pruning and spraying fruit trees are given; proper

A Comparison of Methods

M. Burrell, Grand Forks, British Columbia

BROADLY speaking, there is little difference between the methods adopted by the best horticulturists in the provinces of Ontario and British Columbia as the general principles that form the basis of a successful horticultural practice apply in both cases. There are, however, differences of condition in climate and soil and so on which have led to greater stress being laid on some matters in British Columbia than in Ontario which can be pointed out. For example, while some of the Ontario problems are concerned with the drainage of soils and securing a suitable mechanical condition, here things are reversed. It is extremely rare throughout this province to find a retentive or compact subsoil or a top soil sufficiently clayey in character to bake. Consequently, our problems are more those of irrigation than drainage. As the conservation of moisture is a matter of extreme importance, general attention has been directed to proper methods of cultivation. On the whole, a more systematic and clean cultivation is practised in British Columbia than in Ontario.

methods of packing fruit for market are shown. The association furnishes its members with pure spraying material at cost, importing sulphate of copper direct from England, it having been found that the commercial article on sale in British Columbia contained too much sulphate of iron. Tissue paper for wrapping apples, pears, peaches and tomatoes is also furnished at cost. *Bradstreets* is also furnished for the members.

Eight or nine years ago, some people claimed that British Columbia fruit would not carry safely across the prairies. In order to prove that this was not true, the association purchased a carload of mixed fruits and shipped them to Winnipeg. The car was on the road seven days, but notwithstanding this, there was not a loss of three per cent. The following year, three cars were sent to different parts of Manitoba and Saskatchewan with the same result. This settled the question satisfactorily. Cherries and plums have been shipped at distance of 1,800 miles, yet arrived at their destination in good condition.

The association keeps a watchful eye on express and freight rates and the manner in which the fruit is handled. It has been the cause during the last seven years of the lowering of freight rates, and fruit is now handled by the express companies and railways in a more satisfactory manner than formerly.

For several years small exhibits of fruit were sent to exhibitions in Manitoba and the prairie provinces for the purpose of advertising British Columbia fruit. They proved excellent advertisements.

Until about four years ago the efforts of the association were confined to Vancouver Island, the lower mainland, and the Okanagan Valley. Now, the Kootenays, east and west, the valley of the Columbia, the Thompson, the Nicola and the Lillooet valleys have to be considered, and application for expert assistance has been received from Bella Coola, 400 miles up the coast. It has been said that the association has outlived its usefulness. This is a great mistake, as the area capable of producing fruit is constantly being increased through increased knowledge of the hitherto unknown sections of the province. So will the work of the association increase. Because we have been successful in winning gold medals is no reason for letting up now; this, instead, should be an encouragement to try for things still greater.

The industry in this province is of such recent origin compared with Ontario, and there are so many people going into fruit growing proper as differentiated from mixed farming, that the desire to become acquainted with the most modern methods is perhaps more universal. As a result there is a general keenness to ascertain the exact values of varieties, the real importance of thinning, and acquire any knowledge along the lines of intensive horticulture. A large percentage of the fruit grown consists of apples both for the North-west and English markets. Being practically free from the worst fungous and insect pests, it has not been difficult to produce a clean and highly attractive character of fruit.

Considerably more attention has been paid by us here than by our Ontario friends to the question of packages and packing. The box is the universal package. A careful system of grading is gradually being followed which results in the buyer knowing exactly what he is getting and the seller obtaining a corresponding

price. In orchard work the tendency is strongly towards low-heading of trees.

During the past year or two immense tracts of land have been subdivided into 10 and 20 acre plots for fruit work. The acreage now in fruit throughout the province is about 45,000, compared with 20,000 two years ago, so that it is natural to surmise that, when so many hundreds of people are going into fruit growing as a sole means of livelihood, there will follow a keen desire to acquire the best methods.

Dealing With Insect Enemies

Rev. G. W. Taylor, British Columbia.

All insects are not enemies of the fruit grower. Fully 50% of them are beneficial. Only an expert, however, can tell in every case whether an insect is a friend or an enemy. A prominent fruit grower in British Columbia observed a suspicious looking insect on an apple tree and he sent it to me for identification. It was a syrphus fly, and is among the best friends that a fruit grower can have, because its larvæ feed almost entirely upon plant lice.

In another case, a gentleman, who thought he knew what he was doing, protected adult beetles that were injurious, and at the same time he was fighting the larvæ of the same in the ground. He was fighting the young and at the same time preserving the old of the same species.

The first duty of the fruit grower with regard

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to insect pests is to be ever on the watch. He should not inspect his orchard only once a year, or wait for the inspector to tell him what is wrong, but should be continually on the watch. In this way, he will find out when anything is wrong before much damage has been done. Then, he should call in expert advice. British Columbia fruit growers can seek information from Dr. Fletcher, Dominion Entomologist at Ottawa; Mr. Thos. Cunningham, Inspector of Fruit Pests for British Columbia, or Mr. Anderson, head of the Provincial Department of Agriculture. The third step in dealing with insect pests is to act upon the advice of the expert.

Fruit Inspection

Editor, CANADIAN HORTICULTURIST,—In your editorial column in the May number, under the head of "Fruit Inspection," you stated that during the past winter practically all the inspectors of Ontario were employed within a radius of 15 miles. You infer also that 10,000 barrels of apples west of Toronto still remained with no inspector stationed in that territory, when the temporary inspectors were laid off. Upon these two points permit me to correct

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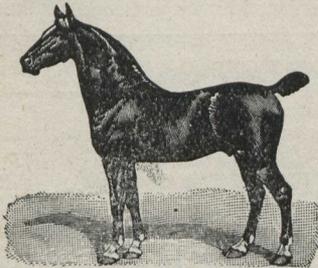
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you in the matter of fact. The inspection for Ontario last winter included the systematic visiting of every packing house in Ontario; the chief work lying between Hamilton and Belleville east and west, and north to the Georgian Bay. This distance is about 180 miles east and west by 100 north and south.

When the temporary inspectors were laid off the first of March, as they have been ever since

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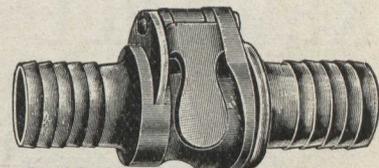
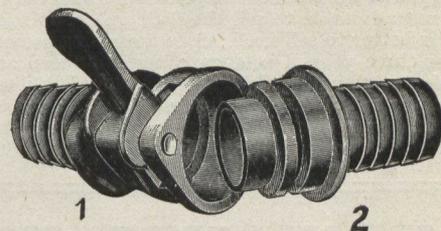
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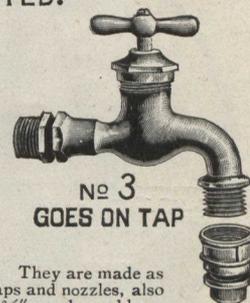
Apple Tree in Bloom in the Kootenay Valley
On the land of J. L. Stocks, Nelson, B.C.

the inception of the Fruit Marks Act, there still remained a much larger force for the quantity of apples to be examined than during the active fruit season, and one was specially detailed to look after the packing houses west of Toronto. With the exception of some irregularities caused by illness, the original plan of visiting all the packing houses systematically was carried out to the end of the shipping season. The questions of policy to which you refer may well be discussed at another opportunity.—A. McNeill, Chief, Fruit Division, Ottawa.

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About Raspberries

A. J. Logan, Beamsville, Ont.

Raspberries should be picked when dry, as they will keep much longer. In marketing, it is not advisable to sell the fruit on commission. It is better to sell f.o.b., or to a canning factory. For three years I sold on commission and as a rule lost money. Then for four years I sold to a factory and came out successfully. During the past four years I sold f.o.b. for satisfactory prices. I see no difference between selling to the

canning factory or selling for cash to local buyers. Young raspberry canes should be pinched back about the time of harvesting. By this means the crop will be increased. The practice is not advisable, however, in patches where the snowy tree cricket is prevalent. In this case, it is not well to pinch back the canes until late fall or spring, because as a rule the insect injures the cane higher up than when it is pinched back in summer. By leaving the work until late fall or the following spring, much of the injury done by this insect can be removed.

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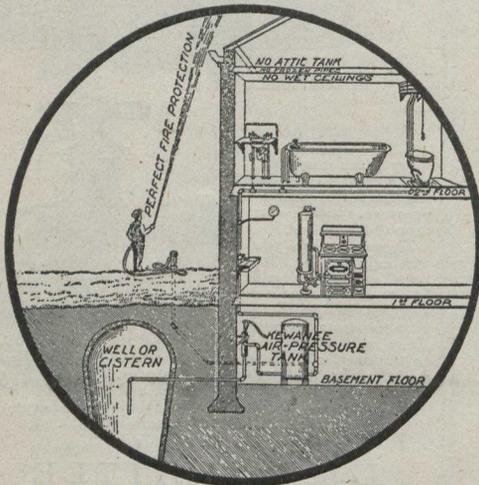
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It is our intention to make THE CANADIAN HORTICULTURIST a national horticultural publication, for our subscribers live in every province in the Dominion. In one mail, recently, we received a number of subscriptions from British Columbia and from New Brunswick. Although many thousand miles apart, these subscribers read THE CANADIAN HORTICULTURIST with as much profit as though they were in Ontario, and readers in both provinces took advantage of our offer to send 20 "3 W's" strawberry plants for one new subscription.

Among other nice lists of new subscribers received in time to begin with the July issue of THE CANADIAN HORTICULTURIST, are lists from W. H. Merrill, Victoria Co., Ont.; W. H. Gibson,

Durham Co., Ont.; E. H. Toll, Kent Co., Ont.; D. Tuesing, Grey Co., Ont.; R. J. Cochrane, Ottawa Co., Ont., and many others.

See our special premium announcement in this issue. It is on page iv.

A square deal is what we all want! Mention our paper when answering advertisements and then, if you think the article you are sent is not as represented, notify us, and we will gladly investigate. This paper is for our readers and we want to see that they get fair play. See our Protective Policy on editorial page.



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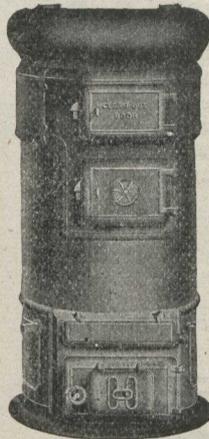
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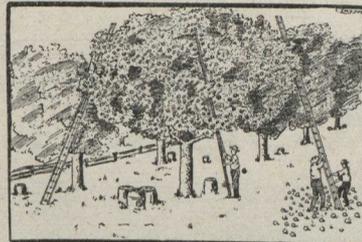
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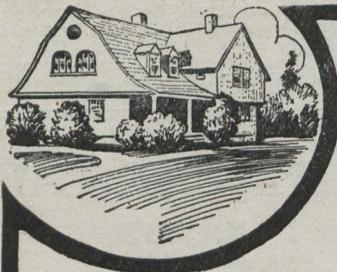

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Many readers of THE CANADIAN HORTICULTURIST took advantage of our offer in the May issue of THE CANADIAN HORTICULTURIST to send 20 "3 W's" strawberry plants, or 10 of Groff's Hybrid Gladioli free, to any reader who would send us one new subscription to THE CANADIAN HORTICULTURIST. A number of our readers not only mailed us in enough new subscriptions to earn both premiums, but some sent in sufficient subscriptions to obtain several sets of both strawberries and gladioli.

Some of those readers to whom we sent strawberries were: Thos. Williams, Victoria Co.;



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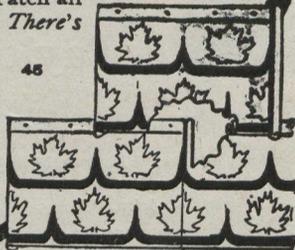
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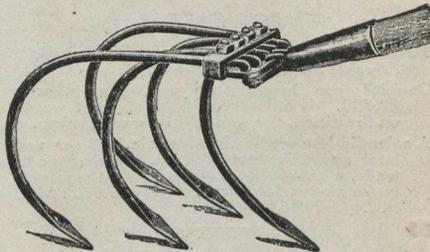
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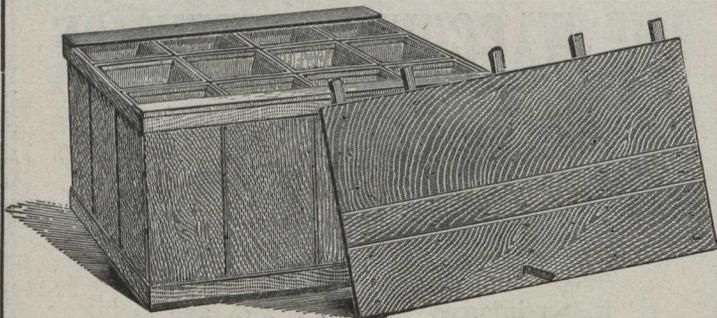
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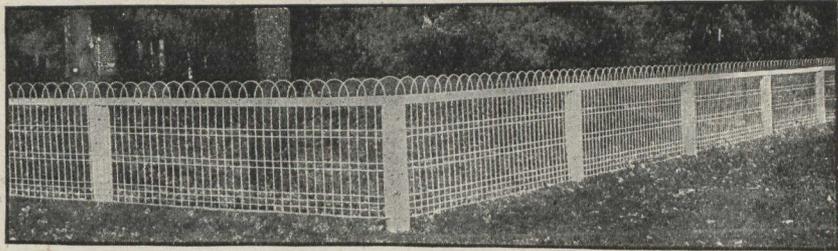
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Some readers to whom we sent Groff's gladioli included: Mrs. W. Scull, Lincoln Co.; Mrs. Stephen Winn, Waterloo Co.; Mrs. J. M. Dods, Peel Co.; W. E. Wallace, Northumberland Co., Ont.; G. Campbell, Summerland, B.C.; Mrs. Thos. MacMurchy, Grey Co., Ont.

Among the readers to whom we sent both premiums were: P. W. Wilson, York Co.; F. Moore, Grey Co.; W. H. Gibson, Durham Co., Ont.; and Mrs. Dugal Smith, Bruce Co., Ont.



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A Popular Premium Offer.— On another page of this issue we announce that we will give one Maynard plum tree, valued at \$1.50 to every reader who will send us one new subscription to THE CANADIAN HORTICULTURIST. We would like every reader of THE CANADIAN HORTICULTURIST to obtain at least one of these splendid trees, but unfortunately Messrs. Stone & Wellington, from whom we are securing them, inform us that only about 350 trees are to be disposed of through our offer. Therefore, we have made arrangements to give one Maynard plum tree, as long as they last, to every reader who will send us one new subscription to THE CANADIAN HORTICULTURIST. Read our offer, and send in your friends' subscriptions.

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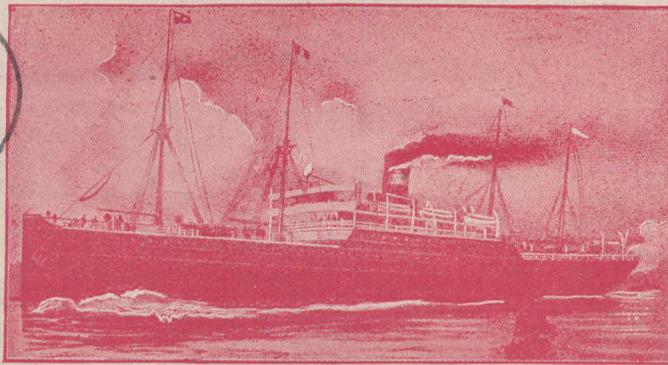
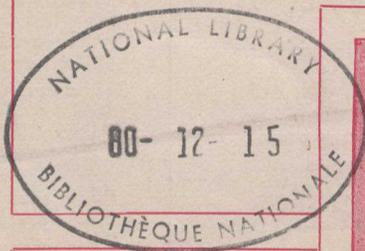
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