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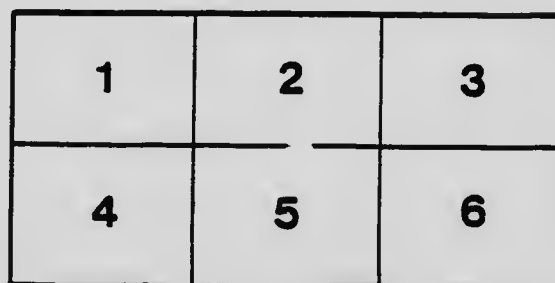
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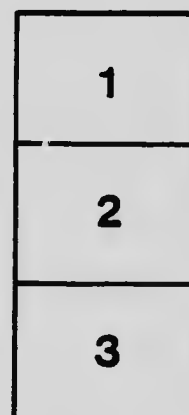
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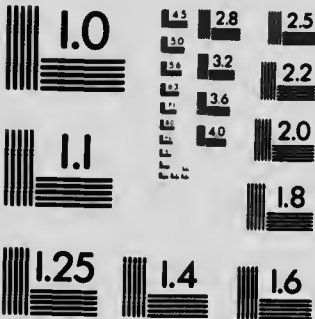
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PROVINCE OF BRITISH COLUMBIA.

DEPARTMENT OF AGRICULTURE (HORTICULTURAL BRANCH).

THE CULTURE OF SMALL FRUITS IN  
COAST SECTIONS.

By W. H. ROBERTSON, B.S.A., ASSISTANT HORTICULTURIST.

THERE is no section of Vancouver Island or the Lower Mainland which is not suitable for the production of small fruits. Climatic and soil conditions are especially favourable, and the market demands for products of this nature are increasing from year to year. With the increased amount being used by the canning and jam factories, and with the demand increasing on both our local and Prairie markets, a strong incentive is offered for increased production.

To the man who goes into fruit-raising with the purpose of obtaining sufficient remuneration to provide for himself and family, and who has very little capital, other than what is required for the purchase of his ranch, the production of small fruits offers a means of livelihood until such times as his tree-fruits come into profitable bearing. It also affords him an opportunity to remain on his ranch during the early years of its development, and thus ensures better treatment for his trees and other crops. The first few years in the life of an orchard is a critical time, so this is an important consideration.

Some of the main points to be considered before setting out a small fruit plantation are:—

(1.) Proximity to transportation lines, markets, and canning and jam factories.

(2.) Sufficient labour available at harvesting-time and for the proper care of the plantation. Do not plant any more than can be properly cared for, as the profitable small-fruit plantations are those which receive the best of care.

(3.) Is your soil of a type and in a condition in which it will produce a good crop of small fruits?

(4.) Are you in a district where small fruits are grown to any extent? The larger the production in a district the better are the facilities for marketing, as a general rule.

**STRAWBERRIES.**

**SOIL AND PREPARATION.**

The best soils for a strawberry plantation are a sandy loam, loam, or clay loam, well supplied with organic matter. Strawberries require a large amount

of moisture and a good supply of plant food for profitable culture. Soil that does not drain well should be underdrained. Where the soil is light, it would be advisable to grow and plough under a green crop, preferably of a leguminous nature, e.g., clover, vetches, peas, etc., before planting. Barnyard manure is also an excellent fertilizer for ploughing under, and should be applied at the rate of from 3 to 5 tons per acre. If the ploughing is not done until spring, the application of the barnyard manure should not take place until a short time before the spring preparation of the patch. Fall ploughing to a good depth is advisable, as there is a heavy winter rainfall, and often a very dry spring. As soon as the ground is dry enough to work in the spring, cultivate well, and in the same manner as you would to obtain a good seed-bed. A good soil-mulch should be kept on the ground until plants are set.

#### PROPAGATION.

Plants are obtained from the bearing patch by taking the new plants which have set on the runners. It is advisable to use only the first two plants on a runner coming from the bearing plant, so as to ensure good strong ones. Those farther distant are, as a rule, poorly developed.

It is a good plan to set apart a section of the patch for the production of new plants. By noting carefully in the bearing patch the bearing habits, yield, growth, strength of vine, etc., of the different plants, you can pick out those which come nearest your ideal and use their runner plants for your propagating section. Where this system is practised a better class of larger-yielding plants is generally obtained.

#### PLANTING.

This can be done either in the fall or spring, depending largely on the condition of the soil and the time of the grower. Spring planting is generally recommended, although fall planting is successfully performed. There are several systems of planting, some of which are: The matted row, the double row, and the Hill systems. With the matted-row system the plants are set about 18 inches apart in the row, with the rows 4 inches to 4 feet apart. The runners are kept off until about the 1st of June, after which they are allowed to set and make a matted row. With this system it is advisable not to allow the runners to set less than 6 inches apart or the rows to be over 2 feet apart. With the double-row system the plants are set about 18 inches apart in the row, with the rows 36 to 40 inches. Four runners from each plant are allowed to start, each producing one plant, two of which are placed on either side of the main plant, thus making a double row. With the Hill system the plants are usually placed 18 inches apart in the row, with the rows 3 feet apart. No runners are allowed to form. The distance for planting varies with the condition of the soil, with the district, and the variety planted. In comparing the results obtained from the three systems, the Hill system seems to be giving the best satisfaction where the summers are dry. A better size of berry can be produced, the patch is more easily kept clean, less moisture is required, and the crop is often as large as is produced under the other systems. In districts and on sites where the early varieties, such as Senator Dunlop, are grown, the matted-row system is mainly used. It matures the fruit a few days earlier than the Hill system. Some growers claim that the matted row is less subject to injury by frost, but in districts where frost-injury is probable the plantation should be protected by a mulch.

Planting should be done only after the ground has been thoroughly prepared. Some of the main points to be observed in planting are:—

(1.) Plan : only in straight rows. For this purpose a marker, wire, or line should be used.

(2.) Keep the plants fresh between the time they are removed from the ground until they are planted in the new patch.

(3.) Use only good, strong plants.

(4.) If there are any large leaves on the plants it is advisable to remove them, leaving only two or three of the smaller ones. Trim off any black or diseased roots, and if the root system is very large it is better to shorten it.

(5.) Pack the soil firmly around the roots and make sure that the crown of the plant is level with the surface of the ground. Do not cover the crown or leave any of the roots exposed.

#### CULTIVATION.

Cultivation should begin immediately after planting and be kept up until the early fall. Two to three inches deep is sufficient in most soils. Deep cultivation, especially in the young patch, is to be discouraged. All blossoms should be kept off the first year. On soils, and in districts where the plants are in danger of being injured during the winter, it is advisable to protect them with a covering of straw, prairie hay, or some cheap material containing no weed-seeds. Most damage is done in early spring through the alternate freezing and thawing of the ground, so the covering should not be removed too early. This can be left between the rows to act as a mulch until the crop is harvested. When no winter covering is used, cultivation should be continued in the spring until the plants come into blossom. A light covering of straw should then be placed under the vines to ensure clean fruit.

Successful growers seldom take more than two crops from a plantation, after which it is ploughed under. The cost of production is usually higher as the plantations become older. Some varieties have imperfect flowers and require another variety in the patch to ensure pollination. Make sure of this point before setting out.

#### VARIETIES.

A list of varieties which have been found to do well on Vancouver Island and the Lower Mainland is given below:—

Variety.	Sex.	Season.
Excelsior .....	P.	Early to extra early.
Sharpless .....	P.	Early.
Warrfield .....	Imp.	"
Royal Sovereign .....	P.	"
Marshall .....	P.	Medium or main crop.
Clark's Seedling .....	P.	"
Magoon .....	P.	"
Senator Dunlap .....	P.	"

P.—Perfect blossoms. Imp.—Imperfect blossoms.



## RASPBERRIES.

### Soil.

For red raspberries, a deep loamy soil, well drained, and with a large moisture-holding capacity, is desirable. On the other hand, the black raspberry will do equally well on loamy soils and well-drained clayey soils. The same method of preparation of the soil as given for strawberries is applicable here. Deep cultivation and plowing is advisable before setting out a patch, especially on the heavier soils.

### PROPAGATION.

The roots of the raspberry are perennial. In the case of the suckering varieties, the general method of obtaining plants is to dig up the one-year-old plants from the bearing patch. In some cases when growth has been sufficient, it is possible to transplant the young plants the same spring in which they start.

Black raspberries, commonly known as "black-caps," are propagated by bending the tip down to the ground and covering with a light layer of soil. This is usually done some time between the middle of September and the middle of October.

### PLANTING.

Planting may be done in either the fall or the spring, all depending on the condition of the soil as to drainage and cultivation. The distance of planting will depend on the variety planted, soil, and district. As a rule, the red and black raspberries are planted in rows, 6 to 8 feet apart, and from 30 inches to 3 feet apart in the rows. The plants require pruning before setting, in the same way as a one-year-old apple-tree—i.e., roots trimmed and top cut back within 6 or 8 inches of the ground. Plants should be set from 3 to 5 inches deep, depending on the soil. Spread the roots and pack soil well around them. Care should be exercised in setting the tips of the black-cap varieties, in order to prevent them from being set too deep. If covered with more than 3 inches of soil they are apt to be smothered.

### CULTIVATION AND PRUNING.

Cultivation: Start as soon as possible in the spring, and continue until early fall. The first year an intercrop may be used, but during the following years clean cultivation should be the practice. In the fall the earth should be ploughed up to the plants. During the winter an application of barnyard manure at the rate of 5 tons per acre is necessary, in order to ensure satisfactory growth; also an application of 200 lb. of muriate of potash applied in the spring is found to be beneficial in improving the shipping qualities of the crop.

Fruit is borne on the one-year-old wood, so that the canes are removed after bearing or in the early spring. The first method is preferable, as in this way danger from disease and insects is lessened, and the new canes obtain a stronger growth than they otherwise would. The following spring the young canes are thinned out to eight or ten canes to a hill, and these are cut back, the amount of top removed depending on the growth that has been made.

## TRAINING.

It is found advantageous to support the vines with a trellis. This is generally done the second or third year. To accomplish this, posts are set 30 feet apart. These posts have a cross-piece at the top which should be at least  $3\frac{1}{2}$  to 4 feet above the ground. The cross-pieces are 22 inches wide. Two wires are strung from post to post and are held apart by the cross-pieces. Within this space the vines are kept upright, thus improving the plantation for picking and cultural operations.

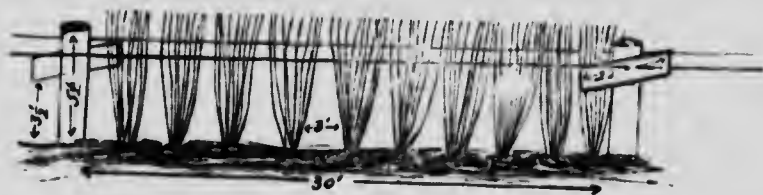


Fig. 1.—Method of training raspberries.

Blackberries of the Snyder type will require the same handling and care that raspberries do. The cutting-back of the one-year-old canes should be done between the middle of July and the first of August. The laterals are trimmed back the following spring. Blackberries of the Evergreen type are grown and pruned in the same way as loganberries.

## VARIETIES.

The following is a brief description of varieties most commonly grown:—

*Red Raspberries.*

*Cuthbert*.—Main crop. Inclined to winter injury. Strong grower. Good shipper.

*Herbert*.—But little grown. Very hardy. Possibly too soft for shipping. May be all right for the local market. Quality good. Early to medium.

*Marboro*.—Early to medium. Hardy and of fair productiveness. Medium quality.

*Black-caps.*

Not grown to any extent. The principal varieties are:—

*Cumberland*.—Season, early to medium. Hardy, productive, strong grower.

*Green*.—One of the best. Valuable for both home and commercial use.

*Blackberries.*

*Snyder*.—Hardy. Vigorous grower. Productive. Fruit, good quality. Season, medium.

*Taylor*.—Hardy, vigorous, and productive. Fair quality and good marketable berry. Season, medium to late.

*Evergreen*.—Good shipper, fair quality. Season, medium to late.

*Himalaya Giant*.—Little known. Very productive. Rather soft to make the best commercial berry. Fine quality and suitable for home use. Little earlier than Evergreen.

## LOGANBERRIES.

The culture of loganberries has not been extensive in British Columbia up to the present, but where they have been tried in favourable districts they are being successfully grown. They are produced in the States to the south of us, both for the fresh and dried products.

They have been found to do well on almost all types of soil, and are being grown successfully on the heavier types. The same general remarks re preparation of land as given above on strawberries are applicable here.

## PROPAGATION.

They can be propagated by tipping, layering, or by the use of cuttings. Tipping is generally practised as described below.

## PLANTING.

This is done in either the fall or spring, but spring planting is generally practised. Planting distances vary. As a rule, the rows are placed 8 feet apart and the plants 18 feet apart in the row. Posts are placed half way between the hills, and each post has two cross-pieces which are similar to those used for raspberries. The lower cross-piece is 35 inches from the ground, the second is 25 inches above the first. Four wires are strung instead of two, as in the case of the raspberries. Spreaders made of pieces of wood 22 inches long and 1 inch square, and notched 1 inch from each end, are placed along the upper and lower wires every 5 feet. The young canes are trained along the upper wires, the bearing canes along the lower wires. No. 12 galvanized wire is used.

## PRUNING.

The fruit is produced on one-year-old wood, so in pruning, all canes that have borne fruit are removed. This is usually done in the spring. Eight to ten new canes are left, and these are lowered from the top to the lower wires and tied to the spreaders. The canes are cut back, from 12 to 14 feet being left. All laterals are also removed.

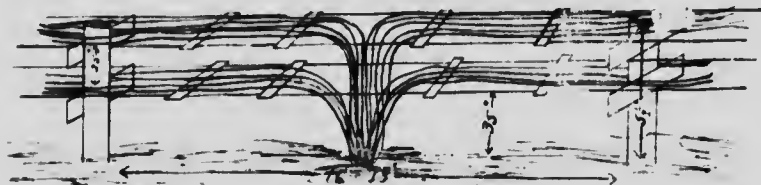


Fig. 2.—Method of training loganberries and Evergreen blackberries. Before pruning.

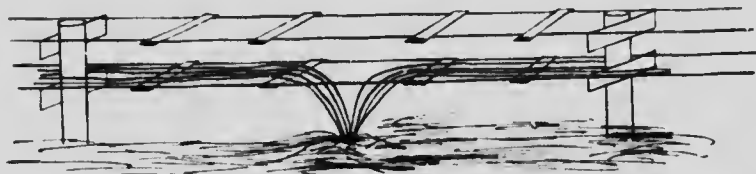


Fig. 3.—Bearing canes in position after pruning.

## CULTIVATION.

Good cultivation is given until midsummer. The patch is ploughed in September, throwing the furrows towards the vines. At that time a number of the shoots where the patch has received good care will have reached the ground, and the rest of these are ploughed under. They take root and afford a supply of new plants for sowing or use in the new plantation the following spring.

A Loganberry patch, when well handled, will yield good crops for many years.

## CURRENTS AND GOOSEBERRIES.

### Soil.

They do best on a rich, deep, well-drained soil. The soil should also be cool, as they are moisture-loving plants. Because of this, a northern exposure is usually preferred, as in such a situation the plants are not likely to suffer in a dry time.

### PROPAGATION AND PLANTING.

Propagation of currants is by cuttings principally, sometimes by tipping and mound-layering. The cuttings are usually taken as soon as the leaves fall. They are made from one-year-old wood, and are from 8 to 10 inches in length. The base of the cutting is made with a square cut, and just below a bud. The upper cut is about  $\frac{1}{2}$  inch above a bud. As soon as they are made, the cuttings should be planted in the nursery row. The rows are about 3 feet apart and the cuttings 4 to 6 inches apart in the rows.

Gooseberries may be propagated either from cuttings or by mounding. For the average grower, mounding will prove more successful than cuttings.

Planting may be done in the fall or spring. One-year-old plants are generally used. The bushes should be planted in rows at least 3 feet apart and from 5 to 6 feet apart in the rows.

Continuous cultivation should be given from the first of the spring until early autumn.

### PRUNING.

Black currants bear most of their fruit on one-year-old wood. It is therefore advisable to have a plentiful supply of young healthy wood. Red and white currants produce their fruit on spurs which grow from the wood two or more years of age. Wood over three years of age should be removed, as the quality of fruit is not so good when produced on the very old wood as it is when grown on the two- and three-year-old wood.

Gooseberries bear on one-year-old wood and on spurs, which bear profitably for two or three years. It is advisable to cut out all wood over three years old, and keep a supply of new shoots and two-year-old wood under way.

### VARIETIES.

The principal varieties grown on Vancouver Island and the Lower Mainland are as follows:—

*Black Currants*.—Naples.

*Red Currants*.—Cherry, Fay's Profile, Victoria.

*White*.—These are very little grown, but sometimes found in the home garden. White Grape is the principal one.

*Gooseberries*.—American varieties—Oregon Champion, Downing. English varieties—Crown Bob, Industry.

The information given in this circular is necessarily brief. Some of the more important essentials to success have been mentioned, which should prove of value to the grower who purposes planting small fruits. It should be borne in mind that the profit which is made on small fruits is due largely to careful attention to cultural operations. The grower who intends planting should have sufficient labour in view and should be in a position to look well after his plantation.

*Victoria, B.C., December, 1912.*

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