THE SIMPLE LIFE

Bush Fruits—Cultivation, Diseases and Remedies—Article IV.

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THE RASPBERRY

Mode of Planting, Cultivating and Pruning

"In field culture, suckering varieties, red, purple and yellow, should be planted in rows six to seven feet apart, and three feet apart in the row. The rows should be accurately measured and indicated by stakes previous to planting. The work of planting is much facilitated by carefully opening with a plough a furrow 4 or 5 inches deep in the line of the row for the reception of the plants. Two plants may be set in a hill, using a hoe to fill in the soil, which should be carefully compacted. Setting out two shoots to begin with, ensures a much better and evener growth in the whole field, than if a single cane is used in each case, and fewer failures will result if this plan is adopted. The cultivator, which should be started as soon as the planting is done, will effectually complete the filling of the furrow.

"Black caps may be planted in rows in the same way. They are also successfully grown by planting in hills four or five feet apart each way. This method allows of very thorough cultivation by horse-power, thus greatly lessening the amount of hand labor.

"The canes of black raspberries should be cut back each season when they have reached a height of two to two and a half feet; unless treated in this way they are difficult to manage. This pinching back causes the plants to grow stocky and to throw out laterals. The laterals may be cut back to a length of 12 to 15 inches in the autumn; but the best plan is to leave them till the following spring, when the injured wood, if any, may be removed at the same time. The bearing wood should be removed as soon as the fruiting season is over. Experiments carried on here during the past two years, and still in progress, have not indicated any striking advantage from leaving the removal of the old wood till spring. There is generally more time to attend to this work in early autumn, than during the hurry of spring work.

"Clean culture with all fruit crops always pays best. In the case of the raspberry, this is particularly true. Frequent shallow cultivation will keep down weeds, and preserve the moisture of the soil, often lacking during the season of fruit harvesting. A superfluous growth of suckers in the case of red raspberries, may be kept under by the cultivator and the vigor of the canes in the row thereby increased. Satisfactory results are also obtained by some growers by mulching with straw or coarse manure instead of cultivating. With comparatively limited areas and situated within easy distance of a cheap manure supply, suburban gardeners can by mulching heavily in this way with straw manure, grow a greater number of plants to the row, and obtain fruit of undiminished size. Some growers mulch the rows of plants only, leaving a strip in the center of the inter space, which is kept clear of weeds by the horse cultivator. Weeds which appear in the rows are hoed out, or pulled by hand. Under ordinary conditions, when the plants are not thinned to something approaching a hill system, the fruit becomes small and the plants lose vigor.

"The Illinois experiment station bulletin No. 80, reports the result of an experiment designed to show the benefit of cultivating the black raspberry throughout the summer, as against cultivation during the latter part of the season, after the fruit was picked. The experiment was carried on for four years, with the result that the area kept cultivated from early spring until fall, yielded 500 boxes more than the same area cultivated from the time the fruit was taken off, until fall.

Training

"In this district, there are two principal methods of growing the red, yellow and purple raspberry, viz.: (1) growing tall canes which are bent over and covered in the autumn for better winter protection; (2) growing shorter canes and thus increasing the likelihood of their being covered naturally, by snow fall.

"Canes which are to be covered should be grown to a height of from 5 to 6 feet, this usually necessitates very little pinching back during summer. In the autumn or immediately after the fruit is picked, the old canes are thinned out, leaving four to six shoots in each hill; the hills being about three feet apart. To bend down and cover these without fear of breaking them, a little earth is taken out on one side of the hill, the canes are then collected in a bunch, and pressed down in the line of row by means of a fork in the hands of one man. The cost of the labor involved in covering an acre should not exceed $5. By this method larger and finer fruit may be obtained earlier in the season than without protection, and it is the best method for the amateur. Some commercial growers in cold regions follow this practice successfully, while others do not find it satisfactory. In cultivating the suckering varieties of the raspberry for market, it will depend somewhat on the situation and the varieties grown, whether it will pay the grower to adopt this plan or follow the next outlined.

"The other method, that of keeping the plants low by summer pruning, is the one usually adopted. To carry this out properly, the canes should be pinched back when they have attained a height of from fifteen to twenty inches (when the climate is not severe they may be grown taller as stated above). This will cause them to throw out laterals, which in turn should be pinched after making a growth of 12 or 15 inches. Sometimes this second pinching is deferred till the following spring. This system develops a very sturdy and stocky bush and one which is less liable to be injured by winter's cold—because usually covered by snow—than one grown by the former plan and left unprotected.

Trellises or Supports

"It should be mentioned in connection with the first system—protecting in winter—that a trellis is necessary to support the canes after uncovering them in spring. Unless a trellis is used, mulching the ground will be essential in order to keep the fruit from being soiled during rain and wind storms. A cheap trellis can be constructed with little trouble by using posts 5 feet long, made of 2 by 6 inch planks, and driving them edgewise across the rows, at distances of 3 to 4 rods apart. A single wire stapled to the outside of these posts will be sufficient to hold the canes in place, and prevent them from being borne to the ground by the weight of the fruit, or by rain or wind. Another plan is to use posts made of 2 by 4-inch scantling. Cross pieces 15 to 18 inches in length are nailed on the posts about three feet from the ground. The ends of the cross pieces are notched. The wire is nailed to the end posts of each row, and is held in place by the notches in the cross pieces into which it is laid. This method allows of the easy removal of the wire when desired.

"In garden culture, it always pays to grow the canes in hills. Each hill should be supplied with a stake to which the canes may be tied. In brief, it may be stated that with winter protection, trellising or mulching is necessary. Without winter protection in the colder regions, growers run the risk of occasional injury to the plants, sometimes amounting to the loss of a crop, and besides are unable to grow the European varieties of raspberries with uniform success."

Yield of Raspberries

The crop of raspberries, like most other fruits, depends largely on climatic conditions, and even though the best variety is planted, if the season is unfavorable or the plantation has not been cared for properly, the yield will be much lessened. As a rule it will be found that the more the crop can be increased by special care the greater the profits will be, the extra labor and expense made being much more than repaid by the increased crop and additional revenue. A crop of raspberries, according to Bailey, ranges from 50 to 100 bushels per acre. Card found that the average yield of red raspberries estimated from the information received from 56 growers is about 69 bushels per acre. At the Central Experimental farm the average yield of red raspberry for the past two years on one row 90 feet in length was at the rate of more than 205 bushels per acre, or about 6,586 lbs. From two rows, each 18 feet in length, or one row 36 feet long, the average yield for the past three years was over 229 bushels per acre, or 7,357 lbs. The average yield of the Brighton from two rows each 18 feet in length was over 175 bushels per acre, or 5,602 lbs. The highest individual yield was obtained from the Herbert in 1904, which produced 50 lbs. 12 ozs. of fruit from two rows each 18 feet in length, or one row 36 feet long, which is at the rate of 10,234 lbs. per acre, or 319 bushels 26 lbs., estimating a bushel at 32 lbs.

While these large yields are from small plots, they show the possibility of increasing the average yield throughout the country very much.

Varieties of Raspberries Recommended

For General Culture—

Red—Early—Brighton, Count Marlboro.

Main Crop—Cuthbert, Herbert.

Yellow—Golden Queen.

Purple—Columbian, Shaffer.

Black Caps—Hilborn, Older, Gregg, Smith Giant.

For Home Use—

Red—Herbert, Sarah, Clarke, Heebner.

Yellow—Golden Queen.

Purple—Columbian.

Black Cap—Hilborn, Older, Gregg, Smith Giant.

Hardiest Varieties—

Red—Brighton, Count, Herbert, Sarah, Turner.

(Loudon has proved one of the hardiest in the Northwest.)

Purple—Shinn.

Yellow—Golden Queen.

Black Cap—Hilborn, Older; Cumberland, a new variety, is promising.

Red and Purple Raspberries

Baumforth.—Originated as a seedling with John Baumforth, Pontefract, England. A strong grower, but quite tender here. Fruit of medium size, roundish, deep red; soft; juicy, briskly subacid; medium quality. Season late. Not desirable.

Belle De Fontenay.—Introduced from Europe about 1850. A strong grower, and hardly enough for this district. Fruit above medium to large, conical, deep red; drupes large; moderately firm; juicy, briskly subacid, with a pleasant flavor; quality good. Season medium. Might be useful if hardier.

Biggar's Seedling.—Originated by Mr. C. N. Biggar, Drummondville, Ont. A strong grower and moderately productive. Fruit medium to above medium in size, conical, bright red; moderately firm; fairly juicy, subacid, god flavor, and of good quality. Season later than most. A good variety, but not quite hardy enough at Ottawa.

Brandywine.—Originated near Brandywine Creek, Wilmington, Del. A chance seedling. A strong grower, but a light cropper at Ottawa owing to its tenderness. Fruit medium to above medium in size, somewhat conical, deep red; moderately firm; fairly juicy, subacid; quality above medium. Season medium. Not desirable.

Cardinal.—Originated with A. H. Griesa, Lawrence, Kansas, in 1888, and is probably a seedling of Shaffer, but is propagated by both tips and suckers. A strong grower and productive, but not as hardy as some others. Fruit medium in size, roundish or slightly conical, deep purplish red; moderately firm; juicy, acid; medium quality. Season medium. Not desirable.

Clarke.—Originated by E. E. Clarke, New Haven, Con., about 1857. Resembles the European raspberry more than the American. A strong grower and quite productive when not injured by winter, but on the whole it is comparatively hardy. Fruit above medium to large, conical, bright red; rather soft; juicy, briskly subacid, good flavor, and of good quality.

Columbian.—Originated with J. T. Thompson, Oneida, N. Y. A seedling of Cuthbert probably pollenized by Gregg. The seed from which this grew was planted in 1888. It was introduced about 1894. A strong growing tip variety and very productive when uninjured by winter. Fruit large, roundish conical, dark purplish red; firm; moderately juicy, briskly subacid and of good flavor; good quality. Season late. Milder and firmer than the Shaffer, which it resembles very much.

Cuthbert (Queen of the Market).—Originated with Thomas Cuthbert, Riversdale, N. Y. Distributed by the Rural New Yorker in 1880. A strong grower, but only moderately hardy. At Ottawa it is only satisfactory in sheltered gardens. At the Experimental farm it has proved practically a failure owing to winter killing. Where it is hardy enough it is quite productive, and is the standard main crop variety wherever it will succeed in Canada. Fruit large, conical, deep red; firm; moderately juicy, subacid, good flavor and of good quality. Season medium. We believe that the Herbert will replace the Cuthbert for home use when it is better known, as it is juicier, as large, and quite as good in quality.

Eaton.—Introduced by A. Garretson, Pendleton, Ind. This variety has not been tested long enough to judge of its relative merits here, but at the New York Agricultural Experimental station, Geneva, N. Y., it is reported: "Not equal to standard varieties on account of habit of crumbling and low quality."

Gladstone.—A chance seedling originating with Chas. Carpenter, Kelly's Island, Ohio, and introduced by him in 1886, under the name of Carpenter's No. 2. Introduced by Green's Nursery, Rochester, N. Y., in 1891, under the name of Gladstone. A strong grower, but tender and unproductive at Ottawa. Fruit of medium size, roundish, purplish red; soft; juicy, subacid, good flavor and of good quality. Season medium. Not desirable.

Hansell.—A chance seedling originating on the farm of J. S. Hansell, near Beverly, N. J., about 1875. Introduced by J. F. Lovett in 1882. A medium grower, hardy but not productive here. Fruit small to medium, roundish, rather dull red; moderately firm; juicy, subacid; quality medium to above medium. Season early. Not large enough nor productive enough.

Heebner.—Originated with W. W. Hilborn, Leamington, Ont. Grown from seed of the wild raspberry found in Muskoka. A strong grower, and quite productive. Fruit large, roundish to conical, deep red; moderately firm; juicy, subacid, good flavor and of very good quality. Season medium. A good variety. Somewhat like Clarke. Resembles the European more than the American raspberry.

Herbert (No. 17.)—A chance seedling originating with R. B. Whyte, Ottawa, Canada, in 1887. One of 30 seedlings, probably of Clarke. A very strong grower, hardy, and very productive. Fruit large to very large, obtusely conical, bright to rather deep red; drupes medium size, not crumbling; moderately firm; sweet and subacid, sprightly, juicy and of good flavor; quality very good. Season begins a few days before Cuthbert. The best real raspberry tested here. It has all the good points required in a berry for local market, being hardy, vigorous, productive, with fruit of large size, good color and very good quality. If firm enough for distant shipment it may displace Cuthbert.

Herstine.—Originated with D. W. Herstine, Philadelphia. A seedling of the Allen, named in 1870. A strong grower and moderately productive. Fruit above medium to large, conical, deep red or crimson; moderately firm; juicy, briskly subacid, good flavor and of good quality. Season medium. A good berry but not as hardy, as large, nor as productive as Herbert.

Hiram.—Introduced by John Lewis Childs, Floral Park, N. Y., in 1893. It is of the European type. A strong grower but winter-kills badly. Is productive when not much injured. Fruit large to very large, bright red, conical; rather soft; juicy, subacid, good flavor; quality very good. Season medium. Should make a good home berry in a milder climate.

Hornet.—This variety originated near Paris, France, and was introduced into America about 1858. A strong grower, but a light cropper at Ottawa owing to its being too tender. Fruit medium to large in size, red; drupes large; soft; juicy, briskly subacid, pleasant flavor and of good quality. Season medium. Too tender at Ottawa, and too soft for a commercial berry.

Kenyon.—Introduced by O. A. Kenyon, McGregor, Ia. Found growing among black raspberries about 1885. A strong grower and productive. Fruit medium to above medium in size, roundish, deep, purplish red; firm; juicy, acid; quality medium. Season early. Not attractive in appearance, but hardy and productive.

King.—Introduced by the Cleveland Nursery Co., Rio Vista, Va., in 1892. A medium to strong grower and a good cropper when uninjured by winter. Moderately hardy. Fruit medium to above medium in size, round, bright red; moderately firm; fairly juicy, briskly subacid; of medium quality. Season early. Not promising.

Knevetts.—An English variety. A strong grower and would probably be productive if hardier. Fruit above medium to large, roundish conical; deep red; moderately firm; juicy, subacid; of pleasant flavor and of good quality. Not hardy enough at Ottawa.

Loudon.—Originated by Frank W. Loudon, Janesville, Wis. Introduced in the fall of 1894 by C. A. Green, Rochester, N. Y. A weak to medium grower, hardy but not productive at Ottawa. Fruit medium to large, conical, bright red; firm; moderately juicy, subacid, sprightly and of good flavor. Quality good. Season medium. Not vigorous, not productive enough. Has proved one of the hardiest varieties in the prairie provinces.

Marlboro.—Originated by A. J. Caywood, Marlboro, N. Y. A cross between Highland Hardy and another cross, the parents of which were the Globe and Hudson River. Introduced in 1884. A remarkably strong grower, hardy, and usually productive. Fruit above medium size, roundish or slightly conical, bright red; firm; moderately juicy; of medium quality. The standard early variety. Brighton and Count are early and are better croppers.

Miller.—Originated at Wilmington, Del. Only moderately vigorous, and rather tender. Has not proved productive at Ottawa. Fruit of medium size, roundish, bright to dark red; drupes large; firm; moderately juicy, briskly subacid; quality above medium. Not a promising variety.

Phoenix.—A stronger grower, hardy and moderately productive. Fruit above medium to large, roundish, deep red; firm; moderately juicy, subacid; of medium quality. Hardiness and firmness are its two best characteristics.

Rancocas.—Originated as a chance seedling on the farm of J. S. Hansell on Rancocas Creek, Pa. Introduced by Wm. H. Moon, Morrisville, Pa., in 1884. A medium grower, not productive here. Fruit above medium size, roundish, deep red; moderately firm; fairly juicy, briskly subacid; quality above medium. Season early to medium. Not desirable.

Red Antwerp.—An old European variety and still one of the best of that class. A medium grower and light cropper here owing to winter-killing. Fruit of medium size, roundish, deep red; moderately firm; juicy, subacid and of good flavor. Quality good. Season medium. Not hardy enough at Ottawa.

Reliance.—Originated by O. L. Felton, Merchantville, N. J., and exhibited at the Centennial exhibition in 1876. Descended from the Philadelphia through several generations of seedlings. A medium grower and moderately productive. Fruit of medium size, roundish, deep red; drupes large; firm, juicy, briskly subacid. Medium to poor in quality. Season medium. Hardier than most, but not otherwise valuable.

Royal Church.—A chance seedling, originating with Mr. Royal Church, Harrisville, Ohio. Introduced by C. A. Green, Rochester, N. Y., in 1893. A medium to stronger grower. Has not proved productive. Fruit of medium size, roundish, bright red; drupes large; moderately firm; juicy, briskly subacid, good flavor; good to very good quality. Season medium. Not very promising except for quality.

Semper Fidelis.—An old English variety. A strong grower, but not hardy enough. Fruit above medium to large, conical, rather deep red; firm; moderately juicy; acid, sprightly; quality above medium. Season medium.

Shaffer (Colossal).—A chance seedling found in the garden of Geo. Shaffer, Scotsville, Monroe Co., N. Y. Introduced by Chas. A. Green, Rochester, N. Y., in 1878. A very strong grower, moderately hardy, but not quite hardy enough at Ottawa. Very productive when canes are uninjured by winter. Fruit large, roundish or slightly conical; dark purplish red; moderately firm; juicy, acid, sprightly; quality above medium. Season medium to late. Not attractive enough for general market. Propagated by tips.

Superlative — An English variety introduced into America by Ellwanger & Barry in 1892. Only moderately vigorous, tender. Fruit large, conical, deep red, attractive; rather soft; juicy, of good flavor and of good quality. May be useful for home use where climate is mild.

Thompson's Early Prolific. — A chance seedling introduced by the Cleveland Nursery Co., in 1888. A strong grower and fairly hardy, but not productive. Fruit of medium size, round, slightly flattened; red; moderately firm; juicy, subacid; quality medium. Season early. Not desirable.

Turner.—Originated about 1835 with Prof. J. B. Turner, Jacksonville, Ill. A very strong grower, very hardy and moderately productive. Fruit medium to below medium in size, conical, deep red; soft; juicy, subacid, good flavor; good quality. Season early. The Turner much resembles a wild raspberry, and is thought to be merely a chance wild seedling. Useful where extreme hardiness is desired, but too small for general use.

Yellow Raspberries

Descriptions of varieties.—Caroline.—A cross between Brinckle's Orange and Yellow Cap, by S. P. Carpenter, New Rochelle, N. Y. A strong grower, but not very productive at Ottawa on account of winter-killing, but quite productive where it succeeds well. Fruit medium in size, roundish, deep orange; soft; juicy, briskly subacid; medium quality. Season medium. It is one of the hardiest yellows but not hardy enough at Ottawa.

Golden Queen.—A chance seedling found by Ezra Strokes, Berlin, N. J., growing among Cuthbert about 1880. Supposed to be a sport of Cuthbert. A medium grower, usually considerably or badly injured by winter at Ottawa, which has reduced the average crop very much. Fruit medium in size, conical, golden yellow; soft; sweet, subacid, good flavor and of good quality. Season medium. The best yellow variety, taking everything into consideration.

Magnum Bonum.—An old English variety. A medium grower and too tender to be productive here. Fruit medium to above medium in size, roundish or slightly conical, deep yellow; rather soft; juicy, briskly subacid, pleasant flavor; good quality. Season medium. One of the best flavored yellows.

Orange (Brinckle's Orange).—Originated with Dr. D. W. Brinckle, of Philadelphia, and fruited first in 1845. A weak grower and entirely too tender at Ottawa. Fruit above medium in size, conical, and of a clear orange yellow in color; soft; juicy, good flavor and of good quality. One of the best flavored yellow varieties.

Yellow Antwerp.—An old European variety. A strong grower, but too tender to be productive at Ottawa. Fruit medium to above medium in size, roundish, deep yellow; rather soft; juicy, sweet, subacid, pleasant flavor and of good quality. Season medium. One of the best flavored yellows, but not hardy enough.

Raspberries Originated by Dr. Wm. Saunders, Director Dominion Experimental Farms

Descriptions of Varieties.—Brighton.—A very vigorous grower, hardy, and very productive. Fruit above medium in size, roundish or slightly conical, bright red; moderately firm; mildly subacid, moderately juicy; quality medium to above medium. Season early. Promising on account of hardiness, earliness, vigor and productiveness.

Count.—A seedling of Biggar's Seedling. A strong grower, hardy and productive. Fruit large, roundish, bright red; moderately firm; briskly subacid, juicy with a pleasant but not high flavor; quality above medium. Season early. One of the most promising for earliness, size of fruit and productiveness.

Craig.—Of unknown parentage. A strong grower, but not quite hardy enough at Ottawa, hence not productive here, although it promises to yield well where hardy. Fruit above medium size, roundish to conical, bright red; drupes large; fairly firm; moderately juicy, mildly subacid; good flavor and of good quality. Season medium.

Deacon.—A strong grower and productive. Fruit medium in size, roundish, rather irregular in shape, deep red; drupes large; soft; subacid, with a good flavor; quality good to very good. Season medium. Not large enough nor firm enough to be especially promising.

Henry.—A strong grower, hardy and productive. Fruit above medium to large, roundish to slightly conical, bright to deep red; moderately firm; briskly subacid, juicy; above medium in quality. Season medium. This variety is hardier than most, and being productive and of good size may be useful.

Lorne.—A strong grower, moderately productive. Fruit above medium to large, conical, deep red; moderately firm to firm; moderately juicy, subacid, pleasant flavor and of good quality. Season medium. Not especially promising.

Mary.—Of unknown parentage. A medium grower and would be a good cropper if hardier, but is not hardy enough for this district. Fruit medium to above medium in size, bright to deep red, roundish or slightly conical; fairly firm; moderately juicy, subacid, good flavor; quality good. Season medium. Might be desirable where hardy enough.

Muriel. — A seedling of Biggar's Seedling. A strong grower and productive. Fruit medium to above medium in size, roundish to slightly conical, bright to deep red; moderately firm; juicy, subacid; quality above medium. Season early. May be useful on account of vigor and productiveness.

Nelson.—A strong grower and moderately productive. Fruit above medium to large, somewhat conical, deep red; firm; moderately juicy, subacid; above medium in quality. Season medium. May be useful on account of firmness. Not quite hardy enough at Ottawa.

Percy.—A strong grower and very productive when not injured by winter, but of late years has proved too tender at Ottawa, and there has been very little fruit. Fruit large, round, deep purple or purplish red; moderately firm, juicy, acid but of pleasant flavor and of good quality. Season medium.

Sarah.—Originated by Dr. Wm. Saunders, in London, Ont., from a seedling of Shaffer. A very strong grower, quite hardy, but is only moderately productive. Fruit medium to large size, roundish, purplish red; moderately firm; juicy, rich, sprightly subacid, very good flavor and of very good quality. Season late. One of the most desirable for home use, and on account of its lateness should be grown by everyone as it lengthens the season considerably.

Shinn.—Of doubtful parentage. A strong grower, very hardy, and very productive. Fruit below medium to medium size, roundish, dark purplish red; moderately firm; acid, juicy; quality medium. Season medium. Where hardiness and great productiveness are required, regardless of appearance and quality this is one of the most desirable.

Sir John.—Seedling of Biggar's Seedling. A very strong grower and productive. Fruit above medium to large, roundish, bright red; drupes large; rather soft, breaks easily; subacid, pleasant flavor, good quality. Season early. Promising on account of earliness and hardiness, but too soft for general use.

Black Cap Raspberries

Descriptions of Varieties. — The Black Cap raspberries are not nearly so hardy as the red raspberries, and as the northern limit of the wild species is not much north of Ottawa, it is not to be wondered at that the cultivated varieties do not do well here.

Between winter-killing and Anthracnose, a disease which the Black Caps are very subject to, the average yields from the varieties of this class of raspberries have been small. A few varieties have proved a little hardier and freer from disease than others. The following descriptions have for the most part been made from fruit grown at the Experimental farm.

Conrath.—Originated by David Miller, Harrisburg, Pa. Supposed to be a seedling of Gregg. Brought into notice about 1896. A strong grower, hardy and productive. Fruit medium to large, black; firm; juicy, sweet with a good flavor quality good to very good. Season medium early. One of the hardiest varieties. Promising.

Gregg. — A chance seedling found growing wild on the farm of Messrs. R. & J. Gregg, Aurora, Indiana, in 1866. Came into prominence about 1876. A very strong grower, too tender at Ottawa, but productive when uninjured. Fruit large to very large, roundish, slightly flattened, black with a conspicuous grey bloom; firm; moderately juicy, sweet; good quality. Season late. This is one of the standard late kinds.

Hilborn.—A chance seedling with W. W. Hilborn, Arkona, now Leamington, Ont. Introduced by him in 1886. A strong grower, hardy, and very productive. Fruit medium to large, black with a little bloom; firm; juicy, sweet, good flavor; quality very good. One of the hardiest and best.

Kansas. — A seedling originating with A. H. Griesa, Lawrence, Kansas, in 1884, and introduced in 1890. A moderately vigorous grower. Not hardy enough at Ottawa. Fruit above medium size, glossy black; firm; sweet, good flavor and of good quality. Season medium.

Mills.—Introduced by Charles Mills, Fairmont, N. Y. Said to be a cross between Gregg and Tyler. A strong grower but not quite hardy enough at Ottawa. Productive where it is hardy. Fruit large and black with a fair amount of bloom; firm; moderately juicy; sweet; good quality. Season rather late. A good commercial berry where it is hardy enough.

Ohio.—Found growing among the Doolittle by Hiram Van Dusen, Palmyra, N. Y., nearly forty years ago. A strong grower and productive where hardy. Fruit medium in size, black; firm, juicy, sweet, very seedy; good quality. Season medium. Not much grown now but was at one time very popular. Esteemed for drying on account of its seediness.

Older.—A chance seedling which originated with Mr. Older, Independence, Iowa, about 1872. Introduced by L. K. Ballard, Warren, Ill., in 1882. A strong, rather pendulous grower, hardier than most and moderately productive. Fruit large, quite black, being without bloom; firm; juicy, sweet, good quality. Season medium early. The Older and Hilborn have done best at Ottawa.

Onondaga.—A cross between Gregg and Tyler, originated by Charles Mills, Fairmount, N. Y., in 1884. A strong grower and productive where hardy, but not quite hardy enough here. Fruit large and black; firm; moderately juicy. Sweet and subacid; good flavor; quality above medium. Season medium late.

Palmer.—Originated with F. R. Palmer, Mansfield, Ohio, and introduced by him in 1888. A strong grower, but not hardy enough at Ottawa. Where hardy it is moderately productive. Fruit of medium size, black, firm; juicy, sweet and subacid, good flavor; good quality. Season early. One of the best early varieties where it is not injured by winter.

Smith Giant.—Originated by A. M. Smith, St. Catharines, Ont. A seedling of either Gregg or Shaffer. First fruited in 1888. A very strong grower, but too tender at Ottawa. Productive where hardy. Fruit large to very large, roundish, black, with a grey bloom; firm; moderately juicy, sweet; good quality. Season late. Much like Gregg, but a little hardier. One of the best late varieties.

THE BLACKBERRY

It is only about sixty years since the first named variety of blackberry was introduced into America. Up to that time the blackberry had received little attention as a fruit to be cultivated the two principal reasons for which being probably the prickly nature of the plants, rendering the handling of them unpleasant, and the good quality of the fruit, in the wild condition. Furthermore, there were no cultivated varieties to be introduced from Europe, as little attention has even yet been paid to the native blackberry there.

The first named variety of blackberry introduced into America was the Dorchester, a seedling introduced by E. Thayer, Dorchester, Mass., about 1850. It was first exhibited before the Massachussetts Horticultural Society in 1841. Much of the credit of its general introduction is due, however, to Capt. Josiah Lovett, Beverly, Mass., who, although he had little success himself in obtaining better varieties from seed, was so enthusiastic over the improvement of the blackberry that he did much to forward the culture of this fruit. The next decided advance in the development of the blackberry was when the Lawton was introduced. This variety was a chance seedling found by Lewis A. Seacor, at New Rochelle, N.Y., and brought into notice by Wm. Lawton, of that place, about 1848, and introduced in 1857. It has also been known under the name New Rochelle and Seacor's Mammoth. The introduction of the Kittatinny about 1865, marked another advance. This variety was found at Hope, N.J., and introduced by E. Williams. The introduction of the Snyder marked the advent of the commercial variety. This blackberry, though inferior in size and quality to many others, proved more generally hardy, and being very productive and a good shipper it has become the most popular all-round berry. It was found as a chance seedling by Henry Snyder, near La Porte, Ind., about 1851, but was not brought into general notice until much later. When it is considered that all the varieties mentioned originated as chance seedlings, the possibilities of improvement by selection and cross-breeding are apparent. Some of the newer varieties originated in this way do show a decided improvement in the size and quality of the fruit. What is now needed is greater hardiness.

The blackberry is a native of the Eastern States, and in Canada it is found from Nova Scotia westward and northward to near the Manitoba boundary. What was originally known as one species is now broken up into several, but as nomenclature is still in a transitionary stage it might be confusing to refer to them here. Horticulturally, the blackberries have been divided by Prof. L. H. Bailey into six different groups, namely:—

1. 'The Long Cluster Blackberries,' of which the Taylor and Ancient Briton are examples.

2. 'The Short Cluster Blackberries,' of which the Agawam, Kittatinny and Snyder are examples.

3. 'The Leafy Cluster Blackberries,' to which the old Dorchester and the Early Harvest belong.

4. 'The White Blackberries,' which belong to the long cluster type, but have light colored fruit.

5. 'The Loose Cluster Blackberries and Dewberry,' to which Rathbun and Wilson's Early belong.

6. 'The Sand Blackberry,' A southern species represented by the Topsy or Child's Tree Blackberry.

The commercial culture of blackberries in Ontario and Quebec is confined mainly to southwestern Ontario. In the Lake Huron district, where there is a heavy fall of snow, blackberries suceed very well, but when unprotected by this covering in winter they are not satisfactory. They are grown with varying degrees of success in other parts of these provinces, the amount of protection they get in winter usually governing the results obtained. At Ottawa there is rarely a good crop of blackberries, as there is not quite enough snow as a rule to protect them well, and the canes are injured.

Propagation

The blackberry is one of the easiest fruits propagated. The suckers, which are produced in great numbers, may be used, or if one wishes to propagate a variety even more rapidly than by suckers, it may be increased from root cuttings. The roots are cut up into pieces two or three inches long. They may either be made in the fall or spring, and are then planted about three inches deep in nursery rows for one season, at the close of which if the soil is well cultivated there will be good plants available.

Soil, Planting and Culture

The blackberry ripens its fruit at a trying time of the year as in late July or August there is often hot, dry weather, and if there is not a good supply of moisture in the soil the fruit will dry up, and what has promised a big crops will result in only a few good berries. In choosing a soil, therefore, one should be chosen which will retain moisture well. As the blackberry is inclined to grow late in the fall, and on this account is more tender than the raspberry, soil should be chosen which although rich in plant food has not an excess of nitrogen, which would be liable to induce late growth. Hence bottom land should be avoided in most places as such is likely to be rich in nitrogen.

One of the best soils for blackberries is a good upland clay loam. In such soil there is likely to be sufficient plant food and moisture without an excess of either, making conditions favorable for the development of the crop and the ripening of the wood. The soil should be well prepared as for all other bush fruits and a good application of rotted barnyard manure to most soils will be found desirable.

Spring planting is usually preferable. If planted early in the autumn the young plants are liable to start growth and the new shoots to be injured by the frost, hence, if planted in the fall they should be set late. Strong one-year old suckers are the best to plant.

Blackberries require a great deal of space to develop properly and to give an opportunity of cultivating and picking them. The rows should not be less than eight feet apart, with the plants about three feet part in the rows. The quickest way to plant is to open deep furrows eight feet apart which cross a light mark every three feet. At each intersection of the rows the plant is set a little deeper than it was before and the soil thrown against it and well pressed against the roots.

Good cultivation should be given the first year to get the plants well established and to procure a strong growth early in the season. When the plants are eighteen inches to two feet in height they should be pinched off to make them grow out side shoots and thus keep them better within bounds. All canes except three or four of the strongest should be cut out. The second year the new shoots made that season should be pinched back when between eighteen inches to two feet in hight, and as they will not all be the same height at the same time, it is necessary to go over the plantation several times. It is important to do this work in good time, as if done too late the laterals will grow too late and be injured by winter. During the second season five or six of the strongest canes should be left, and all the rest should be removed either during the summer or in the autumn. This practice is then followed every year, the canes which have borne fruit being removed as soon after fruiting as it is convenient to do the work. Each spring the laterals should be headed back considerably, the length of lateral to be left depending on the variety, as some kinds set fruit further out on the laterals than others. Until the fruiting habit of the varieties is known the laterals should not be headed back until the flower buds show. The length of lateral to leave after pruning will vary considerably but there should be more than two feet left. If it has not been possible to pinch in summer, and no pinching is better than pinching too late, the bushes may be headed back to three or four feet in height in spring and the laterals headed in as already described.