

# Small Fruits

[James White]

1870

[p.3]

Fruit is the most natural and healthful food for man. It was God's plan that he should subsist largely upon fruit. See Gen. 1.

With the discarding of flesh-meats as food by Health Reformers, has come a need of something to take its place. We know of nothing so eminently adapted to supply this need as fruit. With the extended call for small fruits in the past few years has arisen a demand for practical information upon the manner of their growth. The object of this little work is not to go into the subject for the benefit of the greenhouse, or the professional cultivator, but to meet the wants of every family. Every one who owns a rod of ground, whether in city or country, should know how to cultivate small fruits. Hence we have ventured to give practical hints in regard to the cultivation of the Strawberry, Raspberry, Blackberry, and Grape, studiously avoiding intricacies, or anything that would not be beneficial for the people to carry out.

That our efforts may be appreciated, and that they may result in a more thorough introduction and better understanding of the cultivation of small fruits by health Reformers, is the wish of the writer.[p.4]

## **THE STRAWBERRY**

The strawberry is not only healthful, but it is

also a luxury. There is no better fruit than the ripe strawberry, fresh from the vine.

The Strawberry when allowed to receive the same attention the farmer gives his corn, is very productive. Each square rod, in a good season, on common soil, will yield at least a bushel of most delicious fruit. J. L. Edgar, of Wright, Ottawa Co., Mich., in 1868, picked one hundred and seventeen bushels of market Strawberries from seventy square rods. [This is yielding at the rate of two hundred and sixty-seven bushels to the acre.] These brought him from three to nine dollars a bushel. Land that will produce twenty bushels of wheat, or seventy bushels of corn, will yield at least one hundred and fifty bushels of the Strawberry. The largest varieties, on good soil, well cultivated, will produce berries of enormous size. The editor of the Review and Herald, Battle Creek, spent a few weeks with me at Greenville, Montcalm Co., Mich., in the year 1868. One morning he took a Strawberry from my vines and measured it, which girt nearly five inches. In 1869 I picked one that girt six inches.

The Strawberry, fresh from the vine, is a delicious fruit. It is an excellent berry to can, and scarcely loses any of its value when dried. Why pay out so much of our money for foreign fruits, when in our own country we can so easily grow that which is better?

A large crop of Strawberries may be expected every year with as much certainty as a crop of [p.5] corn, and any one who can manage a crop of corn or potatoes, can grow Strawberries, and the expense and trouble of growing them, if en-

tered upon rightly, is but a trifle greater. Says the eminent gardener, Mr. Pardee: "During many seasons we have had on trial in our garden from twenty to sixty varieties at a time, and although some were comparatively unproductive, yet the average cost of producing them for years has been less than fifty cents per bushel."

### **SOIL**

A deep, rich, sandy loam is the best soil for the Strawberry, but almost any soil can be made to produce the finest fruit. Even the heaviest clay can be prepared by a liberal admixture of sand or gravel, if the land is well drained from standing water. Says Fuller, in a work upon small fruits: "Thorough preparation of the soil is the very foundation of success; therefore no slovenly system, such as once plowing and harrowing, should be tolerated; but the ground should not only be plowed, but cross-plowed, and if not naturally deep, it should be subsoiled at least sixteen inches deep. If the cultivator will only bear in mind that one acre prepared in the best manner will produce more fruit than three or four acres fitted as is usually done, he will understand the importance of doing it well."

If early fruit is the object, a position sloping to the south should be selected. If late, a location sloping to the north.

The soil should not be too highly manured, as the strength of the roots will then go to vines.  
[p.6]

As the object of cultivation is berries, a starved soil should not be selected, neither a

very rich soil, but a medium. Land sufficiently rich to raise good corn or potatoes, is sufficiently rich for Strawberries, and the yield would often be very much diminished by further enriching.

Ground as free as possible from weeds, roots, and seeds of all kinds, should be selected. New land, recently reclaimed from the forests, is preferable. If the land be low, or situated so that water will not immediately run off after each rain, it should be thoroughly drained. Heavy, wet land may be made fit for Strawberries by underdraining.

#### **TIME OF SETTING**

Spring and fall are the two seasons in which the Strawberries are usually transplanted. Of the two, the spring seems to be the more natural time, as the ground is soft and moist, and the weather is usually favorable. From the middle of April to the middle of May is usually the best time for spring setting. For late planting, the months of August and September are preferable. Late setting has one advantage, and that is: if the plants can be set so early that they will become firmly rooted before cold weather, they will generally produce a partial crop the following season, and will become more firmly rooted than they would if the setting be delayed till spring. Late settings are considered more uncertain than those set in the spring.

#### **TRANSPLANTING**

Cloudy weather, or just before a rain, should

be selected for this work if possible. If the weather [7] be warm and dry, the setting should be done just before night. The farmer should set the plants in rows about the distance apart that he plants his corn and potatoes. The plants in the rows should be from twelve to eighteen inches apart. He can then cultivate and hoe them as easily as he does his corn, or potatoes. The Strawberry is not a tender, garden plant. We often see it flourishing in the uncultivated field, or by the wayside.

If land be scarce, as in city cultivation, the plants may be set in rows from eighteen inches to two feet apart, and eighteen inches apart in the row. In this case the bed should be kept in hills, free from runners.

Some use a dibble, or sharpened stick, in transplanting, making a small hole, and crowding the roots together in a mass. Plants will many times live under this treatment if the season be good, but they never do as well. A garden trowel, or a hoe should always be used, as with this the hole can be formed so as to allow you to spread the roots, and leave them as nearly in the position they naturally grow as possible. Care should be taken to set the plants just so deep that the roots will all be covered, but no deeper; for if the crown be covered, it often decays. If the roots are too long to plant without doubling, or crumbling them up, their ends should be cut off. Indeed, some advocate cutting off the ends of the roots as beneficial to the growth and bearing capacity of the plant. The result is, that it causes more roots to be emitted near the crown, and a cluster of fibrous

roots to issue from the cut ends.

It is not necessary to trim the roots of each [p.8] plant separately, but a handful may be pruned at one cut of the knife. Plants thus clipped are more readily planted, and the roots are easily spread out at the time, which is quite important, because each root can produce root-lets without being entangled with others.

If the weather be dry, the plants should be shaded during the heat of the day by boards laid lengthwise of the rows, or by any other means convenient, and if possible watered every evening.

### **CULTIVATING**

There are more systems laid down in books than we have time or space to mention. Will simply give our experience.

Of course the land freest from weeds has been selected, but for this reason the weeds which remain should not be neglected, or they will soon obtain the mastery of the plants. We commence cultivating as soon as the weeds start in the spring; first going through the rows twice with an adjustable horse cultivator shut up so as not to interfere with the plants. Then following with a hoe, taking from the rows everything in the line of the weeds left by the cultivator. The beds should be kept free from weeds by all means. For city cultivation of course a hoe must take place of a cultivator.

If the object be to propagate plants, the bed should be well weeded until runners are in the way. After this they should not be disturbed till after the plants are taken up in the fall or

spring. Persons adopting this method will find the tending of a Strawberry bed is but little more work than tending potatoes, corn, or beans. Strawberries [p.9] should be well cultivated until the time of blossoming. After this they should not be disturbed till after they are through bearing, as it blasts the blossoms, and injures the formed berries.

Three bearing years are as long as it is profitable, as a general rule, for a bed to remain without renewing. If you wish to put Strawberries on the same ground again, it should be manured and put into other crops for a year or two, after which it may be again planted to Strawberries, as no ground should be run too long with one crop.

The best method of manuring Strawberries, is to cover them in the fall with forest leaves, straw, or almost any vegetable matter. In the spring it should be removed where it is thick enough to retard the growth of the plants, allowing them to come up through the dressing.

### VARIETIES

Wilson's Albany.-"Large, irregular, conical, dark crimson, very acid, but good; flesh firm, and bears transportation well. One of the most productive varieties known."-*Fuller*.

"Under the best management, this variety will average about two hundred bushels per acre."—*Country Gentleman*.

One of the best cultivators near Boston remarked that if profit is sought, there is more money in the Wilson than in any others, or *all* the others.

This variety will fruit well alone, or interspersed among other varieties.

"Wilson's Albany is the only variety which all recommend as equally good in all localities."

Triumph de Gand.--"Very large, irregular, conical, but often flattened, bright crimson, flesh firm, [p.10] crisp, rather mild flavor. With good culture this variety has never failed to give a good crop."-*Fuller*.

"This variety maintains its reputation as a kind that, well tended, will never fail to bear a good crop."-*Merrick*.

"Triumph de Gand has kept ahead, taking size, beauty, quality, etc., into the account."-*Notes on Strawberries*.

"Triumph de Gand holds its place as a berry combining large size, and fine quality."-*Tilton's Journal of Horticulture*.

This berry will not stand shipping as well as the Wilson. It does better set every other row with Wilson's Albany. As the yield under such circumstances will be greater, and the fruit will grow firmer and more acid by its connection with the Wilson, while its influence on the Wilson will be to make it milder.

Russell's Prolific.-"Very large and irregular, roundish-conical, with neck, deep crimson, moderately firm, sweet and perfumed."-*Fuller*.

This variety does not bear transportation well, if allowed to get too ripe. Should be planted in connection with the Wilson in order for it to produce well.

Agriculturist, and Downer's Prolific.-Very good in most localities. In some not so good.

Col. Ellsworth .-Very large, good quality, and



produces abundantly.

Jucunda .-Generally of enormous size, excellent when fresh.

Brings more in the market than other kinds, but is not a very good market berry, as it soon decays and becomes worthless.

### **THE RASPBERRY**

This fruit if well tended will prove full as productive and profitable as the Strawberry, and the care in tending it is about the same. It is a little more trouble in starting, but will last much longer without renewing. No definite rule can be given in regard to the number of years that Raspberries will bear without renewing. From ten to fifteen years, if well tended, is the general average.

Many varieties are too tender to withstand the rigor of northern winter without extra care and attention. Among these are the Antwerp varieties, and the common red and white Raspberry.

The Black Raspberry and its varieties seem to be more hardy. What is said in the following pages has reference to these varieties.

### **SOIL**

"The Black Raspberry and its varieties succeed in both light and heavy soils, (although they prefer the former), and in the most Northern, as well as in the Southern States."-*Fuller*.

If the soil be heavy, it should be well drained, and ditched so that no standing water will remain after rains. The land should, unlike that of the Strawberry, be quite rich, as the yield of

berries depends upon the growth of the canes.

### **TRANSPLANTING**

As with the Strawberry, spring is the best time for transplanting the Raspberry, although it may be done in the fall.

"The canes of all the varieties of Raspberries [p.12] are only biennial, that is, canes are produced one year, bear fruit the next, and then die; therefore there is no such thing as two or three year old plants, as with trees and vines, when we refer to the stems, but the roots may be several years old, as they are perennial. One year old roots are the best for transplanting in all cases."-*Fuller*.

The ground should be prepared in the best manner, as with Strawberries.

The plants should be set from four to five feet apart each way, which will enable them to be cultivated both ways, as with corn. Plants that have plenty of fibrous roots should be selected, setting them just as deep as they were before, and no deeper. At the time of setting, the canes should be cut down near the ground, for if left it will require nearly all the strength of the roots to force the buds to start upon them. If cut down, the root will send up new shoots which will bear plentifully the next season. In the other case it will take all, or nearly all of the strength of the roots to support the old canes, which always die down in the fall, and if new shoots are not sent up, there will be no fruit the next season.

### **CULTIVATION**

We can do no better than to quote from Mr. Fuller. He says:

" A plow or cultivator may be used for keeping the weeds down in summer, but keep the soil as nearly level as possible; never bank up the plants, and let them remain in this situation for any considerable time. A small plow may be used to break up the soil between the rows whenever it is necessary, but the cultivator should be passed over it soon after, to level it down again." [p.13]

"Clean cultivation is important, because if the plants become choked with grass and weeds, they will check their growth, and not only the fruiting canes will suffer for moisture, but those intended for the next season's crop."

### **PRUNING**

But little pruning is necessary, except to go over the ground after fruiting, and cut out the canes which have just borne. It is best not to defer this till winter or spring, as some do, but they should be cut down immediately after bearing, so that they will not crowd the new canes.

"The principal canes should be shortened to four or five feet, and the lateral ones to about eighteen inches. When pruned in this manner the fruit will be much larger, and the plant will yield as many quarts as though the canes were left their full length. Besides, the canes will very often set more fruit when left unpruned than they can mature, and all is lost."

### **TRAINING**

The best method of training, is to tie the canes to stakes five feet long, set firmly in the ground by each hill. Various other methods may be adopted for city culture, such as training on wires, or within a hoop fastened to stakes.

### **PROPAGATION**

Young canes should always be used as layers, and they should be put down as early in the season as they are of sufficient size to be handled, say from the middle of August to the middle of September. Propagating by layers should be done by [p.14] bending the young canes to the ground, and covering their ends with earth, just sufficiently to keep the wind from displacing them. If the canes are well covered, they will generally root in two or three weeks.

### **VARIETIES**

Following are the names of a few of the best varieties.

Doolittle's Black Cap .-This is the most popular, hardy, and productive variety of the Black Raspberry.

American Black .-Not so juicy as the former, and a great portion of the berry is composed of seeds. Quite productive.

American White Cap .-Often found wild. A very good variety if well cultivated.

Davison's Thornless, or Thornless Black Cap. -The cane of this variety is not covered with thorns as most are, and the berries ripen a week or ten days earlier than the Doolittle.

The following are also good varieties:

Miami Black Cap, Ohio Everbearing, and Seneca Black Cap.

The last variety is eight or ten days later than the Doolittle.

The Raspberry is an excellent fruit to can or dry.

### **THE BLACKBERRY**

"The Blackberry, as a general rule, does not bring quite so large a price in the market as the Raspberry, but the yield per acre is often greater, so that the returns will be about equal, although, [p.15] as a rule, they are not considered as profitable a fruit as the Raspberry.

### **CULTIVATION AND PROPAGATION**

"The same method of cultivation recommended for the Raspberry, is also applicable to the Blackberry. In selecting a soil, a rather dry one is preferable to one that is very moist or wet; neither should the soil be as rich as for the Raspberry, because the varieties generally cultivated are large, coarse-growing plants, and if the soil is too rich the canes will grow very large and succulent, and will neither be so hardy nor productive as those of a moderate growth. It is also a good plan to pinch off the terminal shoots the last of August or the first of September, to check the growth, and cause the canes to more fully ripen than if allowed to grow undisturbed. The plants should always be given more room than the Raspberry, as they usually grow more branching, and make larger stools. The rows should be at least six feet apart."-

*Fuller.*

They should be tied to stakes, the same as recommended for the Raspberry. It is better to cut out the old canes as soon as they are through bearing, although they may be left till tying up in the spring.

The Blackberry propagates by suckers, which should always be kept cut down if they are not wanted for setting. Setting should always be done before the leaves start, as they will hardly ever live if it be delayed till after starting of the leaves.

#### **VARIETIES**

Lawton, or New Rochelle .-"Very large, irregular, [p.16] roundish-oval, black, very juicy, and sweet when fully ripe, but it does not reach this point until several days after the fruit has become black, at which time it is very soft and sweet. It is a strong and vigorous grower, and very productive. The fruit commences ripening rather late, and continues for a long time, and unless the soil is naturally moist, or the ground covered with mulch, many of the late berries will fail to come to maturity. The canes are rather tender, often winter-killing if not protected."

Dorchester.-Fruit large, sweet, rich and excellent, with considerable of the wild Blackberry flavor. An excellent variety, and quite hardy."

Kittatinny.-Large, moderately firm, sweet, rich and excellent. Very productive and hardy."

Wilson's Early.-Very large, black, firm, sweet, rich and good. Fruit ripens early, and entire crop matures in about two weeks."- *Fuller.*

## **THE GRAPE**

As a fruit for table use, there is none, perhaps, that is prized more highly than the Grape. Its beauty, flavor and healthfulness all combine to make it desirable for cultivation. The Grape is easily and cheaply raised, but good cultivation is the best economy.

## **SOIL**

A gravelly loam is the best for the grape, and should be well drained and warm. A situation sloping to the south should be selected if possible, but never sloping to the north. [p.17]

"We should always endeavor to make thorough work in the preparation of the soil before planting the vine, for it is not an ordinary crop that we are to plant, nor one that requires a seed time to each harvest, but it is one that requires but one planting in a lifetime, yet it will reward us with many harvests. There are very few soils that a person of good judgment will select that will need any further preparation than that which can be done with the plow, with the addition, perhaps, of underdraining.

"If the soil is not naturally rich, spread the manure upon the surface before plowing, then turn it under with the surface plow, and let a subsoil plow follow in the same furrow, breaking up the subsoil. After the ground has been plowed over in this way, then cross plow it in the same manner; this will insure a thorough breaking up of the soil, and mixing the manure with it.

"The grape should always be grown in the warmest and most sheltered situation, so that

the fruit may ripen well before frost."- *Fuller*.

### **SETTING**

Fall is the best time for setting, because the soil becomes settled about the roots, and all wounds made upon them in the process of transplanting will become healed, and new roots will often issue in the spring before it is time to transplant. They will be ready to commence growing as soon as the frost is out of the ground. Mr. Fuller thinks that Grapes set in the fall will make at least one third more growth the next season, than if delayed till the following spring. If set in the spring, it should be done as soon as the ground will work. [p.18]

As a general rule they should be planted seven or eight feet apart, and trained to stakes, the same as the Raspberry and Blackberry.

### **CULTIVATION**

A plow should be never used, as it will more or less disturb the roots, but a cultivator should be used. On a light, porous soil, a mulching of coarse, strawy manure should be kept around the roots, as it retains the moisture. In heavy, wet, or clayey soils, mulching should not be tolerated, as it holds too much moisture near the surface, which sours the ground, and the surface roots will be destroyed in consequence. On the contrary, the face of the soil should be kept open by frequently stirring it with the hoe or cultivator, so that it will more readily admit the air, and with it, heat and moisture. Two or three years old plants are best for transplanting.



### **TRAINING AND PRUNING**

The systems of training the Grape are as various as can well be imagined, but the one which seems to recommend itself as the best, is as follows:

Soon after planting the Grape, set a stake by its side firmly in the ground, leaving five or six feet above ground. To this the vine should be kept tied with strong rags, basswood bark, or something that will not damage the tender vine.

The first year of setting, the root should be allowed to send up but one shoot, from which the laterals (little shoots starting from the base of each leaf,) should all be kept off. Fuller says that each lateral should be allowed to make one leaf before it is trimmed, then pinch the end off [p.19] above the leaf. As leaves filter the sap, they should not be trimmed too close. This vine, if thrifty, will make from four to six feet the first year. At the time of the fall trimming, this cane should be cut down to within twelve or eighteen inches of the ground. Fall trimming should be done as soon as the leaves drop off.

The second year two shoots may be allowed to grow from this stub, each shoot being supported by a stake. These shoots, if thrifty, will usually bear three bunches each. If they are not very vigorous, the bunches should be pinched off immediately after they have set. All the laterals should be kept trimmed close. These vines should not be allowed to make more than six or eight feet during the season, and at the time of fall trimming should be cut back to five or six feet.

The third year these two vines should be

trained to separate stakes. Fruit-bearing shoots will start out from these last year's canes, the ends of which should be pinched off after the fifth or sixth bud. These shoots will usually bear three or four clusters each. The laterals should all be kept subdued. At the time of the fall trimming the arms which have borne this year should be trimmed off to within two buds of the old stock, saving the original two stocks for standard bearing vines, allowing bearing arms to start from them each year, and trimming them off in the fall to within two buds of the old vines.

If after several bearing years the canes become degenerated, the fruit smaller, and not of as good flavor, they should be cut down to within twelve or eighteen inches of the ground, allowing them to send up two new shoots as before. [p.20]

The vines should be taken down from the stakes in the fall, just before the ground freezes, and covered with earth, especially till they are four or five years old.

### **PRODUCTIVENESS**

The following calculation is gathered from the writings of practical fruit growers.

If set in rows six feet apart, and eight feet apart in the rows, about 900 vines can be set on an acre. Each vine will produce on an average, one pound the second year, giving 900 pounds to an acre. The third year each vine should produce ten pounds, or 9,000 pounds to an acre. The fourth year double that amount, or 18,000 pounds. It is very seldom that the Grape

sells less than ten cents a pound, but oftener from fifteen to twenty cents. Reckoning at ten cents, the crop from an acre the second year is worth \$90, the third \$900, and the fourth \$1,800.

The following is from the Fruit Grower's Society, of Western New York.

"One member, whose vines had come into full bearing, reported his present profits at least \$1,500 an acre-this is under a high system of cultivation. Other reports were not quite so favorable as this, but none, even of large vineyards, were less than \$500 per acre, net."

A nurseryman of Grand Rapids, Mich., set out an acre of Grapes on shares. Last season his share brought him \$700. He was then offered \$700 for his share in the vineyard, which he accepted.

### **PROPAGATING BY LAYERS**

Any vine that has a young shoot which can be [p.21] made to reach the ground may be layered, but it is not advisable to take layers from vines that are planted for fruiting. The vine wanted for layering should be trimmed in the fall. But one new sprout should be allowed to remain, and this should be trimmed back to from four to six feet.

In the following spring, dig a trench as long as the vine to be layered, and bend it into the trench, fastening it in this position by crotched sticks, or by laying stones upon it at intervals. Let the vine remain in this position until the shoots have started from it four or five inches. Then pinch off all but five or six, distributing

them equally along the vine. After it is decided what shoots are to be allowed to remain, a stout stake should be driven by each, and as soon as they are five or six inches long they should be tied to the stakes. At this time draw a little earth over the layer, covering it about an inch. At intervals of a week or ten days, more earth may be put in till the trench is filled. If filled while the shoots are very young, it will cause the part below the ground to rot. All the shoots should be kept tied to stakes, and if one seems to take the lead, and appropriate more than its share of the sap, it should be pinched off. Where but one plant is wanted from each root, the vine may be allowed to bear. It may be treated as follows: Allow an extra shoot to start from the root in the spring. As soon as it has grown enough to bend down without breaking, dig a small hole near the end of this shoot. Cover it slightly, leaving the tip of the shoot out of the ground. The following spring root enough will have formed to allow it to be transplanted.

### **VARIETIES**

The following description of varieties is taken from Fuller's Grape Culturist.

Delaware .-"Bunch medium, very compact, and generally shouldered. Skin thin, of a beautiful dark-red color when fully ripe. Flesh tender and juicy, scarcely any pulp, exceedingly sweet, but brisk and vinous. Vine very hardy, moderately vigorous, and productive. Ripens the first of September. If I could have but one variety for my own use, it certainly would be the Delaware, as it is the highest flavored native

Grape known."

Concord.-"The Concord is without doubt the most profitable Grape for market. It will grow and produce abundant crops in situations, and upon soils where some of the more delicate varieties would utterly fail. Bunch compact, large and shouldered. Skin thin, often very thin. Flesh moderately juicy and sweet. Pulp quite tender when fully ripe. Very hardy and vigorous. Ripens from the 10th to the 20th of September."

Clinton.-"The vine is so very hardy and vigorous that it often succeeds in localities where all others fail. It should not be planted on the richest soil, as it is naturally a rampant grower, and when planted in rich soil is almost uncontrollable. Bunches medium; usually shouldered. Berries medium, round, black, juicy and spicy. Ripens from the 15th to the 25th of September."

Iona.-"The vine is a strong and vigorous grower, short jointed, and very hardy. Bunches large, shouldered, compact. Berries large, and [p.23] round, skin thin, pale red, with small deep red veins at first, changing to dark red when fully ripe. Sweet brisk flavor. Ripens from 10th to 20th of September."

Hartford Prolific .-Wonderfully productive and hardy, and unless the vine is severely pruned, and the young bearing canes checked in summer, the bunches will be loose, and the fruit will shake off quite easily. Bunches large, shouldered, compact. Berries large, round, sweet and juicy. Ripens the first week in September."

Isabella .-Too well known to need a description. Very tender. Does not ripen till late, and for this reason is not practicable for most northern localities. Succeeds well in Western New York, but not in Michigan.

Many other varieties might be mentioned, but the foregoing are the principal practical ones.

### **CANNING FRUIT**

The Strawberry, the Raspberry, the Blackberry, the Blueberry, the Cherry, and the Grape, may be safely canned by a similar process. We recommend the glass, self-sealing can. We have used the Mason, the Dexter, and the Hero, with success.

1. Pick over the fruit carefully, and take out everything like decayed berries, stems, or leaves, leaving the fruit clean and fresh.

2. Make a syrup of one quart of water, and about one pound of sugar, more or less, according to the acidity of the fruit; heat it in a porcelain kettle; when boiling hot add berries enough to fill [p.24] four one-quart cans, and let it remain over the fire until the fruit is thoroughly heated.

3. Cleanse the cans, and place them on a folded towel, wet in cold water, and fill them completely full with the heated fruit. Pass a spoon down the sides of the can to let out the air that may remain among the fruit. Be sure to have the can completely filled before closing it, so as to exclude the air. Screw down the top at first as far as convenient; as it cools, continue to screw down as far as possible.

4. When the cans are cool, set them in dark, dry, cool place. They should be examined daily

for several weeks to see if they are keeping well. If the fruit shows signs of fermentation, it should be scalded again, and carefully secured in the can.

Peaches, Pears, and Quinces, should be pared, and may be cut in quarters, halves, or used whole. When pared, they should be dropped in cold water to preserve their natural color, then put into boiling syrup the same as small fruits. They should be boiled until a straw can be passed through them. Then carefully fill the can with the fruit, pour in the syrup, and close as in the case of small fruits.

Tomatoes may be preserved in stone jugs, although glass cans are preferable. They need no syrup of sugar and water, and are so juicy that the liquid may be reduced by boiling down. The Strawberry has been regarded very difficult fruit to preserve in cans. It is probably the most difficult. But if the foregoing suggestions be carefully followed, we have no doubt but this berry will be canned with success. We make this statement upon the authority of several practical canners, [p.25] which agrees with our own experience. We have on hand, in a state perfect preservation, about thirty cans of the Strawberry, put up by Mrs. W., at Greenville, Mich., seven months since.

We put up, in all, during the summer of 1869, about four hundred quarts of fruit, in the manner before described, and with the exception of a very few quarts, it has all kept exceedingly well.

The following relative to canning fruits is taken from an article by W. C. Gage, Health Re-

former for August, 1869:

### **"CANNING**

"The best method for preserve fruit with all its original flavor, is by hermetically sealing it from the air in cans prepared for the purpose; and these should be of glass or stoneware, as the acids of fruit act chemically on tin and other metals, often destroying the flavor of the fruit, and sometimes rendering it very unwholesome. Either self-sealing cans, or those which require wax, may be used successfully, but probably the former are better for those of little experience, and they are unquestionably more convenient. Of these, there are several claimants for public favor, all of them highly recommended, and doubtless all of them good.

### **"THE SELECTION OF FRUIT**

"This should be done with the greatest care. Some varieties cannot be preserved at all, unless canned when perfectly fresh, and success is more certain with all kinds if this particular is regarded. The fruit should be nearly or quite ripe, but not over-ripe, and any which bear signs of decay, must be carefully excluded.

### **"COOKING THE FRUIT**

"Nearly all varieties are better steamed than stewed or boiled, and this for three reasons; 1. The fruit is not so badly broken and mashed; 2. It retains more of its original flavor; and 3. Little or no water is required to be added, and it is therefore cooked in its own juice.

"Almost every family has conveniences for



steaming on a small scale, either with the common tin steamer, or the elevated platform, which can be used in a common kettle. To those who wish for more ample facilities, we would recommend the following cheap and simple method: Take a common wash-boiler, and have fitted into it a horizontal platform of sheet iron, perforated freely with half-inch holes, so as to allow the free passage of steam. Have it mounted upon legs, so it will stand clear from the water, which should be only a few inches deep in the bottom of the boiler.

"Have your fruit carefully picked over, and placed in a clean, tin or earthen dish, with a cover over it to prevent the condensed steam from dropping into it. *No sugar is required* with any kind of fruit. We have informed by one who is always successful in this business, that the flavor of the fruit is better preserved without sugar; and she *never lost a can*. If sugar must be used, it can be added when the cans are opened for the table.

"Place your dish of fruit on the platform of your steamer, having sufficient water in the bottom, but not too much. Then cover the whole closely, and steam until thoroughly scalded. Some kinds of fruit require a longer time than others, and judgment must be exercised in regard to the <sup>[p.27]</sup> matter. It should not be cooked so as to fall to pieces, but care should be taken to have it thoroughly scalded.

"While the fruit is cooking, the cans should be prepared. Have them thoroughly cleansed, and when ready to fill them, place the can upon a folded towel, wet in cold water.

"The fruit may now be poured into the cans. Peaches, pears, or other large fruit, may be tastily arranged in the cans with a fork, piece by piece, and the boiling juice added afterward to cover them. When the can is full, shake it, and incline it back and forth, so as to cause the air to rise to the top, if any should be among the fruit. Be sure that the can is full to the brim, and then screw on the cover, or if not a self-sealing can, put in the cork, and cover with melted sealing-wax. The following recipe makes good wax: one pound of rosin, two ounces of beeswax, one and half ounces of mutton tallow. Melt and mix.

"While placing the fruit in the cans, be careful to protect them from currents of air, as they are frequently broken by a simple draught of cold air.

"All the above work should be performed expeditiously. The cans may then be set away to cool, and should be kept in a cool, dark place, and closely watched for a few days to see that the sealing is perfect. If the fruit shows signs of not being perfectly sealed, it should be at once taken out, scalded, and sealed again.

"Tomatoes, berries, and small fruits, may be preserved in stone jugs. Observe the same rules in preparation, heating the jugs thoroughly before putting in the fruit. When filled, place one or [p.28] two thicknesses of cloth over the mouth, and then put in the cork, covering the whole with wax.

"By close attention to particulars, and the exercise of good judgment, success is almost certain."

### **GENERAL REMARKS**

1. The cultivation of small fruits is a very pleasant employment, and if tastefully done, will have an elevating influence upon the mind. In this respect it is especially recommended to young men and young women. Parents in country, village, and city, will do well to interest even their small children in raising fruits. Their little hands can do much in plucking the weeds, and gathering the precious fruit.

2. It is a profitable business. If the cultivation of small fruits be entered upon in a proper manner, it will prove one of the most profitable branches of business within the reach of those who cultivate the soil. And the increasing demand for fruits for table use, occasioned by radical changes of public opinion upon the subject of fruit, seems to warrant the suggestion that the greater the amount of fruit raised, the greater will be the demand.

3. The change from meat-eating, to the free use of fruit in its place, is one of decided importance. It is a change, beneficial, physically, mentally, and morally. The American people are killing themselves with the excessive use of meat. And how poorly does man sympathize with the groaning creation, in slaughtering and devouring those creatures that God has made and given life. The [p.29] squealing of swine, the squalling of fowls, the bleating and bellowing of sheep, calves, cows, and oxen, on butchering day, is all calculated to make men and women, naturally of pretty good heart, permanently brutal. Let the change come to the use of fruits, vegetables and grains, that God has made for

food for man, that he may become milder in temper, clearer and more elevated in thought, and firmer in constitution, and physical strength.

4. Every farmer, who really is farmer, should have an acre, at least, of small fruits. Five acres of corn are hardly enough to fatten hogs, beeves, and fowls, for a farmer's table, under the common administration of pork, beef, mutton, turkey, and chicken. If these can and should be dispensed with, as not proper articles of food, cannot the farmer devote one of his many acres to God-given fruits, which are just what he needs on his table? We would be glad to arouse farmers on this subject; but the difficulty is, that many, in the press of farming, can see but little of importance but wheat, corn, potatoes, oats, hogs, turkeys, and chickens. Some can see a far greater delicacy in a pint of swine's grease than in a quart of delicious berries. But the reform is going forward, and these farmers will soon rank small-fruit growing with their first and most important duties.

5. We do not recommend too many varieties of the Strawberry, Raspberry, Blackberry, or of the Grape. The Wilson Strawberry, mixed with the Triumph de Gand, either every other row, or otherwise, is all the kinds most farmers need. The largest berries, the most on a square rod, and the best, we ever raised, was where these two varieties were completely mixed by mistake. The Wilson [p.30] and Russell mixed may be equally good. While the Col. Ellsworth, Juncunda, and Agriculturist, are good alone almost anywhere. Those who wish to propagate plants

for the market, may do well to obtain several kinds, pure and true to their kinds; but to simply raise berries for the family, two or three kinds are better than more.

Doolittle's Black Cap Raspberry bears about the same relation to the entire Raspberry race, as the Wilson and Triumph de Gand do to all sorts of Strawberries. We know of no one kind so good as the Doolittle.

The Blackberry does well in Michigan, especially the hardy varieties. But we think it doubtful as to its success on the prairies of the Northwest, unless completely covered in winter. This can easily be done with dirt, or coarse dressing.

It is of little use to plant the Grape anywhere, unless pruned to the end to raise berries instead of numerous vines and leaves. The grower can have many small vines and leaves, or he can have a fruit. We prefer the fruit. Therefore, we strictly follow directions before given. Two or three varieties for the private garden are better than more.

6. If the Strawberry be set, the rows 42 inches apart, and the plants in the row 18 inches apart, it will require about 8000 plants to set one acre.

Raspberries, in rows each way, 4½ feet apart, will take 2100 sets per acre.

Blackberries, 6 feet each way, will require about, will require about 1200 per acre.

Grapes, 7 feet each way, will take about 800 roots per acre.

Those who design entering into fruit-raising [p.31] quite abundantly, should at once furnish

themselves with a sufficient amount of plants and roots to afford an immediate and a liberal supply of fruit for table use, and also to propagate plants and roots in abundance to supply themselves and others.

We now propose to furnish the Strawberry plants, the Raspberry, Blackberry, and Grape, delivered at the Express Office, at Battle Creek, or at Ionia, Mich., at the following prices, 20 per cent discount to those who send cash with order. With preachers and personal friends, to whom we may feel indebted for past favors, we will make special arrangements, by letter, as to prices and time of payment. We wish to hear from such immediately. We do not design to trust any only personal friends and acquaintances, in whom we have perfect confidence in their ability and promptness to pay. The better way is to send cash with order, and save 20 per cent.

These plants, roots, and vines can all be conveniently packed in the same box, and safely sent by express to any part of the country where there is an Express Office.

We do not engage in the sale of fruit stock from a need, or a desire for profit; therefore fix prices as low as we safely can. Those who can furnish themselves as well nearer home, had better to do so, if they can feel sure of getting good plants. Our object is to instruct the people, and to assist those who need help.

#### **PRICE LIST**

Strawberry Plants.—We will furnish the Wilson's Albany,

Triumph de Gand, Russell's Prolific, and Downer's Prolific, at 20cts. per dozen, \$1.00 per hundred, \$7.00 per thousand.

The Agriculturist, Col. Ellsworth, and Jucunda, at 40 cts. Per dozen, \$2.00 per hundred, \$15.00 per thousand.

Raspberry.-We will furnish Doolittle's Black Cap for 75 cents per dozen, and \$4.00 per hundred.

Blackberry.-We will furnish the Lawton Blackberry for \$1.00 per dozen, and \$5.00 per hundred.

Grapes.-We will furnish the kinds mentioned in this work, for 50 cts. each, \$5.00 per dozen, \$25.00 per hundred.

All orders should be sent in by the first of March. This will give us time to purchase of large dealers what we may lack to fill all orders. Address ELD. JAMES WHITE, *Battle Creek, Mich.*

