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1885.

CRAWFORD'S

SMALL FRUITS.

FREE TO ALL.

MATTHEW CRAWFORD,

CUYAHOGA FALLS, O.

DUFFY BROS., PRINTERS.

THIS CATALOGUE, though small, contains some useful information. Please examine it, and judge it according to its merits. If you find any unsoundness in it, it is your privilege to warn others against it. If it meets your approval it will be cheerfully sent to any of your friends whose names and addresses you may furnish. It is my intention after this year to send catalogues only to customers, and those who send for them. By so doing I shall need a much smaller number, and can afford to make it more valuable. It would be a pleasure to add to this, but as it will be sent free to thousands who will probably never buy a plant from me, the expense would be too great.

While I am anxious to obtain new customers. I have a much greater desire to retain my present ones. To do this I expect to treat them well, and I have the ability and disposition to do it. Every season I aim to get along without making a single mistake, but have never quite reached that point. The number of orders filled in a few weeks is very large, and we are but human. Every effort will be made to give satisfaction, and if a mistake occurs—which is not at all likely—it will be cheerfully rectified. This applies to any past transaction no matter how old.

The "Transactions of the Miss. Valley Horticultural Society" for 1884 is a volume of GREAT VALUE to fruit growers. It can be obtained for a small sum by addressing the Secretary, W. H. Ragan, Greencastle, Ind.

DIRECTIONS, TERMS, &c.

State whether other varieties may be substituted in case those you order can not be supplied.

I have no varieties for sale except those named in this catalogue.

I issue no wholesale price list. Prices per 1,000 on application.

Send money at my risk by P. O. money order, registered letter, draft on New York, or express. Less than a dollar may be sent in stamps. Send no individual checks.

I guarantee the safe arrival of all plants, whether sent by mail or express.

Packing is done in the best possible manner to insure lightness and safety, and no charge made.

The prices are for plants sent by express, the purchaser paying all charges. If you desire them sent by mail, add to the price as follows, to pay the postage:

	Per doz.	Per 100.
Strawberries.....	0	40c.
Raspberries, Blackberries, Currants, Grapes,...	10c.	75c.

Six plants at dozen rates, 50 at hundred rates.

With the exception of strawberries, it is better, every way, to have plants sent by express, except when ordered in small quantities. It usually costs less, too. Orders will be filled as promptly as possible, but we can not usually dig plants before the first of April.

Address, M. CRAWFORD, Cuyahoga Falls, O.

CATALOGUE, 1885.

Raising Small Fruits.

*Prepared by M. CRAWFORD, for the Trumbull County, O.
Horticultural Society, June, 1884.*

The frost and drouth of the present season may lead some of us who are engaged in small fruit culture to look on the dark side, and to feel that we have more to contend with than any other class; and in view of this state of things perhaps it would be well to recount some of the advantages of our occupation. By so doing we may find that we have more to encourage than we ever before thought of, even when things were most prosperous. It is natural for us to magnify our difficulties and drawbacks, and forget our advantages. Let us now reverse this order, and for the time being put aside all our discouragements, and consider some of the reasons why we should congratulate ourselves that we are fruit growers.

It is a business that benefits all classes and injures none. It is almost the only business in which a poor man can engage and be his own employer. Fruit growers are comparatively independent; they are not liable to be thrown out of employment. If sickness hinders for a time, their crops do not cease growing. If friends come to visit, they can take a little time without having to give an account of it, or deduct the price from the few dollars due them at the end of the week or month. It is worth much to a man to be employed at home, to spend his days with his family rather than in some mill or shop or factory. Those who have children may justly consider it a great advantage to be able to employ them during the summer vacation, when so many children are running wild, and laying the foundation of bad habits which cling to them for life.

Fruit growers have more leisure than most working people. In the winter they can take time to plan for the next season, and get everything ready for work. They can attend important horticultural meetings, doing good and getting good; and just here is a point worth noticing. Fruit growers have no secrets; the proceedings of their meetings are published to the world. They have originated many improved methods, but they do not guard their knowledge with a high board fence and locked gates, lest others should profit by it. On the contrary they gladly give to their fellow men the benefits of their thoughts and experiences. They adopt the generous motto "My light is none the less for lighting my neighbor's," and act upon it. While they meet more frequently than any other class of working people, they come together for a nobler purpose than to connive to monopolize all the advantages their business may possess. There is no monopoly in this, as in many other pursuits. The man with a single acre, or even a village lot, can engage in small fruit culture, and is quite likely to re-

alize better returns for the amount invested than one with a hundred times as much.

As fruit growers have a general knowledge of horticulture, they can do more to make home beautiful than any other class in moderate circumstances; and for the same reason they and their families have a more liberal supply of the good things produced by the soil than other people. Fruit growers are intelligent; they do more reading, writing and thinking, and cause more printer's ink to flow than any other class of working people. They are independent, they have neither asked nor received any special privileges; no protective tariff, no bounties, no remission of taxes, no favors of any kind have been bestowed on them, and no other industry has been taxed to make theirs profitable. Notwithstanding all this, the business has had a wonderful growth, and it was never in a more healthy condition than at the present time. Everyone is interested in it directly or indirectly, and the number actually engaged in it is amazing. It is easy to see that, large as the business is, it will for several reasons go on increasing. The demand is increasing, and the supply is so perishable that the market cannot be overstocked for any length of time, however many engage in it. But little capital is required to commence the business. It is not necessary to buy the land, and if it were, a little is sufficient. No expensive implements are needed; and the returns come so speedily that the capital invested does not lie idle long. This is very different from being in debt half a life-time for a farm and the tools and stock absolutely necessary to make it profitable.

Fruit growing does not require a great outlay of physical strength, as there is but little hard work connected with it; and for this reason it is a suitable occupation for those who are not able to engage in farming, market gardening, or any employment which involves much hard work. Old men, invalids and children may spend their little strength in fruit growing and be successful. It is pre-eminently a business for women. There is scarcely any other work in which they can engage with as good a prospect of making money. It requires no great amount of time and study to prepare for it, and after getting established in it one is not liable to receive from some capricious employer an invitation to step down and out. Ladies are our most successful florists, and they can do equally well raising small fruits.

But though small fruit culture offers so many inducements to those who meditate embarking in it, it would be unwise for any one to engage in it on a large scale without some practical knowledge of the work, no matter how fine and well digested his theories may be.

Small fruit plants are set out for a special work—that is to send their roots through every inch of the soil in search of plant food, and, having found it, to change it into fruit. Our part is to prepare the soil, set out the plants and see that they have the best possible opportunity to do their work. Last of all we secure the crop. Plant food, to be available, must be dissolved in water, and within reach of the roots. For this reason we pulverize the soil to a good depth, and endeavor to keep it moist, so that the roots may readily extend in every direction. That the plant may work to

the best possible advantage, the soil should contain an abundance of food for it. To provide this food we enrich the soil. Plants or animals may live with very little nourishment, just enough to prevent their dying, but they are kept at a loss to the owner. Who would think of employing a man and keeping him idle most of the time for want of proper tools and materials? When you hire a bricklayer at \$4 per day you employ a cheaper man to carry the brick and mortar. Of course the bricklayer could do it just as well, but you do not want his valuable time spent in that way. So when you employ a strawberry plant to make fruit you should see that the raw material is put within its reach. Spending valuable time and labor in cultivating poor land is one of the most serious mistakes ever made by tillers of the soil. After preparing the soil and setting out the plants we must see that they are kept growing without hindrance of any kind. All our small fruits, except the grape, do best in a comparatively cool, moist soil, and in a situation that is somewhat sheltered and not exposed to the full glare of the sun. Plants are hindered in their growth in various ways, as by weeds, drouth, and want of air at the roots. Allowing weeds to grow among our plants to rob them of food and moisture, is almost as unwise as cultivating poor soil. One would scarcely expect a manufacturer to erect a building, fill it with tools and material, hire his employes, and then invite all the loafers in the community to come and use his material for their own selfish ends, and yet this would be just about as wise as allowing weeds in growing crops. While we cannot produce rain at will, we can to a great extent, by frequent stirring of the surface and by mulching, prevent the evaporation of moisture from the soil. This same stirring keeps the surface loose and admits air to the roots. After having grown the crop, final success depends very much on the manner in which it is picked and marketed. This is especially true of strawberries, which are often sent to market with such an unattractive appearance that they yield no profit to the grower, and very little pleasure to the consumer. Small fruits should be carefully picked, and all damaged or worthless berries left out. They should be sent to market in clean baskets or boxes, and each of these should contain berries of a uniform size from top to bottom.

No part of fruit culture is of more importance than a knowledge of varieties, and this must be learned, in part, by each one for himself. A person with little or no experience should commence in a small way, and confine himself mainly to such varieties as are known to do well in all soils and localities. If everyone would 'prove all things and hold fast that which is good,' nurserymen would receive fewer curses and fruit growers more money. As a rule, everyone should raise his own plants, except new varieties which he wishes to test. In this way he is sure to have them fresh, well grown and true to name, besides saving heavy express charges.

When we consider the healthfulness of the work, that it is carried on in the open air, that it furnishes an agreeable exercise for both mind and body, and that success is in exact proportion to the brain work invested, it is not strange that so many engage in it.

Strawberry Culture.

I originated the following method and gave it to the public through the *Ohio Farmer* some years ago. It combines so many advantages that I can recommend it to every one who cultivates the soil. All who have tried it are pleased with it, and if it were generally adopted there would be no more failures with this fruit. I will try to make it so plain that all may understand, for it is adapted to the smallest garden or the largest farm :

CRAWFORD'S METHOD.—Select ground that is suited to the potato, and as early in the spring as it is fit to work, plow it as deep as possible without bringing the poor sub-soil to the surface. After plowing, spread over the surface a heavy coating of well-rotted manure, or its equivalent in bone dust and wood ashes. This should be thoroughly worked into the soil with the harrow or cultivator, after which the surface should be left smooth. It should then be planted to strawberries, three feet by four, with rows running both ways. Choice should be made of a vigorous growing sort, and only strong, healthy plants that have not been dried or injured in any way should be used. It is very important that the crown be not covered, or failure will follow. Immediately after setting the strawberries, plant a hill of early potatoes between every two plants, in the narrow space—leaving the wide space for the cultivator. The surface should be kept well stirred with the cultivator and hoe, and every blossom and runner cut off as it appears, until the potatoes are dug in July. By that time the plants will be very strong, and able to send out several large healthy runners at once. If there be any white grubs in the soil they will be found in the hill of potatoes and it is well to look out for them. After digging the potatoes, cultivate the ground both ways until it is as fine as ashes, after which the cultivator is to be run in the wide space only. The runners will soon fill the space occupied by the potatoes and as the strip of plants grows wider, the cultivator must be narrowed up ; and if any weeds come up among the plants they must be removed with the hoe or by hand. All deep cultivation must be discontinued in September lest the surface roots be disturbed, and no stirring among the plants should be done in the spring. If weeds appear shave them off with the hoe. If, however, the bed is mulched as it should be, there will be no trouble from weeds.

As soon as the fruit is picked, plow up the bed and sow it to buckwheat, Hungarian, or corn for fodder ; or it may be planted to celery, pickles or any second crop. In this way the land produces three crops in two years, while by any other method only one is obtained.

I hope to hear from any person who gives this method a trial and finds it unsatisfactory.

Mistakes in Strawberry Culture.

Read at the June meeting of the Portage County Horticultural Society, by M. Crawford :

The subject of strawberry culture is said to be threadbare, but the fact that many are without this fruit, is my excuse for naming some of the mistakes that lead to failure.

One of the most serious and common mistakes we make is planting wrong varieties. To avoid this we should rely mainly on such as are known to succeed in our locality, and with our mode of culture. It is well enough to be governed by the experience of others, if they have no axe to grind.

It is a mistake to buy plants from unreliable parties because they are cheap. The cheapest are not always the best. Sometimes those obtained for nothing are dear in the end.

Allowing plants to become dry while out of the ground is a common cause of failure. When transplanting is done in the most careful manner, the plants receive a check; how much more when the fine hair roots are dried! Keeping plants in a dark, damp place till they become blanched, is also very injurious.

People often plant too deep, forgetting that only the roots should be in the earth. Other small fruits will grow if set quite deep—the strawberry never.

In preparing the soil we often make mistakes, forgetting that the rich surface soil should always be left on top. If this be neglected, but few surface roots will be sent out in the fall, and the plants are likely to get injured in the winter. The deeper and richer the good soil the better, but it always belongs on top.

We often shorten the growing season, by compelling the plants to remain idle for want of air at the roots. Keeping the surface loose not only prevents the growth of weeds, but admits air, without which the plants can not long survive. Water standing on the surface, especially in the growing season, will also cause the plants to die.

Many plantations are more or less damaged every winter for want of some covering. Unless plants stand thick in the bed, or are full of weeds and grass, it is very necessary that they have some protection, not to keep them warm, but to shade the surface and prevent its thawing on bright days.

We often lose more than we gain by keeping old beds. In the absence of injurious insects, they will yield a fair crop for a number of years; but these pests are on the increase, and old beds furnish a breeding-ground for them.

It is a great mistake to let plants bear the same year they are set. They need time to recover from transplanting, and while the little fruit they produce is almost worthless, the next year's crop is greatly diminished.

It is generally considered a mistake to injure the roots by cultivating late in the fall, or in the spring before the fruit is gathered.

In addition to the above, I would say that it is a mistake to grow strawberries, or any other crop that requires much work, on poor land. The same labor that will produce 50 bushels on poor soil will produce 150 on rich. If the former can be grown without loss, the latter must be very profitable indeed. He who cultivates poor land works for small wages. It is too much like running a 10-horse power engine with a 3-horse power boiler; or like driving a poor horse that can draw but an empty wagon.

Worth Knowing.

All those who have cultivated strawberries must have noticed how inconvenient it is to have the runners extending in all directions. Sometimes they run from one row to the other, where they are torn up by the cultivator, and sometimes two plants send their runners toward each other making some parts of the row too thick, and leaving others vacant. All this may be avoided by setting the plants in such a position that they will run in a given direction. I discovered years ago, that the strawberry plant sends out its runners in but one direction, or from one side, and that is the side opposite the old runner that produced it. If the side of the plant from which the main runner was cut is set toward the north, that plant will run to the south.

Hill Culture.

At Barnesville, O., strawberries are grown in very large quantities and in great perfection. They are mostly sent to the Chicago market where they are sold at a high price—twenty-five to fifty cents a quart. There is nothing peculiar about Barnesville soil or climate. The same growers could do as well elsewhere. The following is their method:

The soil is made *very rich* and is thoroughly prepared. Sometimes over 100 loads of well rotted stable manure are put on an acre, and it is plowed, harrowed and stirred until as fine as a flower bed. This is done as early as possible in the spring. The plants are set in rows three feet apart and a foot apart in the row—14520 plants to the acre. All blossoms and runners are kept off the first season. The ground between the rows is kept well stirred and *no weeds* are allowed to grow. The whole surface is carefully covered in the winter.

There is nothing new about it, and it has many advantages. It requires a great many plants and much work, but the profits are large in proportion. Over three hundred bushels have been obtained from an acre by this plan, and the bed is allowed to bear from three to five crops.

Hints on Fall Planting.

The strawberry is perennial and grows all the year except (?) when the ground is frozen. Next year's crop of fruit will be made principally from the food gathered and stored up in the crown of the plant during the present season—just as the milk given by a cow to-morrow will be made from the food consumed to-day. Runners rooted late in the fall have not time to store up food for the next year's crop, hence they can produce little or nothing. If, from *any* cause, the plant be hindered in its growth during the summer or fall, the crop will be small in proportion.

The perfection of culture consists in supplying the wants of the plant, that its growth may be rapid and continuous, and that it receive no injury while in the dormant state, or out of the ground.

Now, what are the wants of the strawberry when planted in the fall? The soil for the strawberry should be rich and moist, but not wet. It matters not whether it be sand, clay or muck,

so that it furnishes anchorage for the plant, and contains an abundance of the elements necessary to its growth. It should be stirred to a good depth, but little or no poor subsoil should be brought to the surface. It is well to have it prepared some little time in advance, so that it may have time to settle somewhat before the plants are set. The surface should be rich. This is especially important with fall-set plants, as their roots have comparatively little time to go far in search of food. There is another advantage in encouraging surface roots: they are not drawn out or broken by the expansion of the water in the soil when it changes to ice, but rise and fall with the ground. Roots that run deep are apt to be broken or drawn out—as red clover—while white clover roots remain uninjured, although frozen and thawed a dozen times. If the soil has been enriched for a previous crop, so much the better; but if not, well decomposed stable manure may be worked into the surface either before or after setting the plants. Bone dust and wood ashes will supply all that may be lacking in any soil, and these can be obtained in nearly all parts of the country. Of all the commercial fertilizers none is safer to buy than pure ground bone. It must, however, be decomposed before the plants can use it, as they take up all their food in solution. For immediate effect it is sometimes advisable to use dissolved bone (super-phosphate of lime) which will be washed down to the roots by the first rain. It should be impressed on the mind of every tiller of the soil that neither pleasure nor profit can be derived to any great extent from cultivating poor land.

A plant receives more or less of a check by being taken up and reset, in the growing season, even though this be done in the most skillful manner. The following method I have used with great success for more than a quarter of a century: the plants are taken out of damp soil, with great care, divested of all runners and superfluous leaves and thrown into a pail of water. They are then carried to the new bed and each one taken out as planted. The roots are spread out in fan shape, with the crown even with the surface, and a little damp soil put over them and pressed firmly against them, the balance of the soil is then filled in loosely. If the weather be very hot after transplanting, a little shade during the middle of the day, for a time, will be an advantage.

Another very satisfactory method is to set the plants about four inches apart in loamy soil, with the roots spread out carefully and covered with half an inch of earth. In this situation they can be shaded and watered, if necessary, and in a few days thousands of new roots will be sent out. They may then be taken up, after a thorough watering, with the soil adhering, and set in the new bed, where they will grow from the first without wilting. This is the best way to treat all plants received from a distance. Soon after the plants are set out they will commence to send out runners which must be cut off as soon as they appear. The soil should be kept well stirred from the time the plants are set until the end of the growing season; but all *deep* cultivation should be discontinued after the first of October, lest the surface roots be injured. Plants set in the fall—the earlier the better,—will produce fine fruit the following June, and will make a far greater growth than if the planting be postponed till spring.

As soon as freezing weather comes, the whole surface of the bed should be covered to the depth of two or three inches with straw or any light litter. Early in the spring, when the plants begin to grow, the covering should be removed from over the crown of each plant and left between to keep the ground moist and the fruit clean.

Raspberries.

Few people, even tillers of the soil, know to what extent the raspberry has been grown of late years. This is more especially the case with black caps. Some who raised from one to five acres now raise from ten to fifty. The price has not come down, nor is it likely to. They are so easily dried that the grower will not pay express charges and commission unless he is pretty sure of a fair price. Red varieties are seldom or never dried. If they can not be sold at a paying price, they are canned or made into jam or jelly. I have known over two thousand dollars' worth of red raspberries to be sold from six acres in a year. Any good variety—either black or red—will yield more bushels to the acre than corn, and from three to six crops may be obtained from a single planting. One should have some knowledge of fruit culture before he can expect great success. If really anxious to learn, he can get this knowledge from the experience of others. The directions in this little book, if faithfully carried out, would insure success. Raspberries are worth from three to eight dollars a bushel, they meet with a ready sale, they are nice to handle, they do not exhaust the soil and they come into market at a time when every one is earning money and is willing to spend it.

Culture.

Red varieties are usually planted in rows six feet apart, and from two to three feet in the row. After the first season, suckers are allowed to grow from six to twelve inches apart in the row—all others being kept down with the cultivator and hoe, just as we treat weeds. The ground between the rows should be kept stirred, but not too deep after the first year. The roots come near the surface, and if the plant be employed in repairing damages done with the cultivator, it will be but poorly prepared to resist a low temperature and produce a crop of fruit. Some growers plant from four to five feet apart each way and allow six or eight canes in a place. They can then cultivate both ways, leaving but little to be done with the hoe. Red raspberries need no summer pruning, but in the spring from one-fourth to one-third of each cane is cut off.

Black caps need more room than red ones—partly because they are so thorny that a horse will not go very near them. Six or seven by three feet is the common distance. The plants should be set three inches deep, covering them an inch or two, and filling in the rest after they have made a few inches growth. When the young plants have grown ten or twelve inches, the ends should be nipped. They will then send out branches which should be cut back to a foot, or less, at the winter pruning. After the first year, the young canes are stopped when two feet high, and at the winter pruning—which may be done any time after the fall of the leaves—the lat-

erals may be shortened to two feet or less, according to the growth made. The purple varieties should be treated like the black caps but need rather more room—especially the Shaffer.

Raspberries do best on land that is rich and moist, but not wet. A little shade is no disadvantage. After the first year no cultivation at all is better for black caps than very deep stirring of the soil. I know a patch that has done well for seven years without any attention whatever.

Blackberries.

Perhaps briers are as thoroughly detested as any thing with which farmers have to contend. They grow almost everywhere and if let alone they produce a large amount of really good fruit. Wild varieties are not all alike by any means. While some are worthless, others are of large size, hardy and of good flavor. This catalogue will doubtless be sent to many who know of desirable wild varieties that bear every year. I would like to correspond with any person who knows of a superior blackberry or black raspberry.

Although this fruit grows wild and is very tenacious of life, when cultivated it is subject to disease and is very liable to disappoint the grower who tries to improve on nature's methods. I have known people to plant this fruit, and as they thought, give it excellent care. Year after year it was winter-killed, and in time the owner became discouraged and left it to go to ruin. After that he had berries in abundance. I have known people to find desirable wild ones and attempt their cultivation with the same result. They constantly interfered with the root growth of the plant. By digging, plowing, cultivating and hoeing, no roots could grow near the surface, and that is just where they want to grow. A wild variety growing in a pasture or fence corner has most of its roots within two inches of the surface. The Lawton is not noted for hardiness, but I have in mind two persons who rarely failed with this variety. Neither of them gave any cultivation, but kept the ground covered for some distance with chips, brush, &c. This is the great secret in raising blackberries. Plant in rows eight feet apart, and three or four feet in the row. Give no summer pruning the first year. The second summer stop at three feet, and trim in spring as you would black caps, leaving more wood. Cultivate shallow, or mulch. If you want to keep them within due bounds in the garden, surrounded the patch with a narrow ditch a foot deep.

Currants.

The currant is easily grown and always salable. Until the currant worm made its appearance, this fruit could be found in nearly every garden—in many cases sadly neglected but still bearing. A very large number of farmers have allowed the worm to kill their bushes, and, as a consequence, this fruit has become scarce and high priced. Those who give their things attention at the right time, find the currant profitable. As soon as the leaves are half grown in the spring, the worms may be found near the ground and most likely near the center of the bush. A very little white hellebore dusted over the leaves when wet with dew will destroy

the worms. This should be done early before the leaves are much injured. The worm does not attack the black currant, and this fruit is in great demand by foreigners.

The Grape.

An Essay read before the Summit County Horticultural Society
by M. CRAWFORD.

There is a pressing need of more light on grape culture, for the reason that such knowledge can be turned to good account by nearly all classes. We can not all have an orchard, or even a single fruit tree. Some have not room for a row of currant bushes or a strawberry bed; but who has not room for a grape vine? Its branches may be trained on a building or a fence. Its roots will run under the sidewalk, along the foundation, beneath the buildings—anywhere and everywhere—in search of plant food, which, dissolved in water, is carried to the leaves and boiled down, as it were, and converted into grapes. What an opportunity this is for every man and woman to add to the comfort, health and happiness of those dependent on them! Horticulture gives to workingmen almost the only opportunity of adding to their income outside of working hours, and this branch of it is especially inviting. I once knew of a large vine in a city lot that produced over a hundred dollars' worth of grapes each season for several consecutive years. How much is it worth to have all the grapes one wants for himself, his family and his friends for even three months in the year? And this is within the reach of nearly all, without making any effort to keep them beyond the season. With a little care, Catawba and some others may be kept in a cool room for months. Last July, at the residence of R. A. Hunt, of Euclid, O., I ate ripe raspberries, blackberries and Catawba grapes—the latter grown in '83 and kept in a new fruit house of his own invention, built in one corner of the barn. The vine, besides furnishing such delicious fruit, adds greatly to the attractiveness of home. Even the name, "vine-covered cottage" or "vine-clad hills," suggests that which, once possessed, can never be forgotten. The culture of the vine has always had a refining influence over those who have engaged in it. The inhabitants of the vine districts of Europe plant vines wherever they go. You can almost pick out their homes as you drive through the streets of any city.

Where it Flourishes.

Grapes may be grown in all parts of the United States and Canada, wherever a grape grower can be found; and the more unfavorable the locality, the better will be his success, for this reason: the greater the difficulties to be overcome, the greater effort is put forth. If he lives far north, he will cover his vines in winter; if too far south, he will grow them on the north side of a hill or building. If his ground be too wet, he will drain it, or grow his vines on a raised border. The hills of southern Ohio are especially adapted to this fruit, but Cincinnati gets its grapes from the shores of Lake Erie. All over the South the vine is at home, but New Orleans sends to New York for grapes. Michigan, cool and level, the last place one would expect this warm-blooded fruit to

flourish, sends hundreds of tons to Chicago and other markets, and sends cuttings to France.

Some parts of the country are so favorable to this industry that success comes almost without an effort, but people are slow to learn that it may be carried on successfully almost anywhere.

When to Plant.

The vine may be planted after the leaves fall, and at any time before growth commences in the spring. A stronger growth will follow fall planting provided the vines receive no injury during the winter. Potted plants may be set any time during the summer, and are very satisfactory.

How to Plant.

If the vines be strong, it is only necessary that their roots be spread in a natural position, and a little deeper than they were before, and that fine, rich soil be brought in close contact with them, and the hole filled up. If weak, single-eye vines be used, greater care must be given. Fine roots that have grown in a mellow bed, and within an inch or two of the surface, should not be covered to a great depth at first. This is true even of asparagus. The roots of a plant must have air or die. In planting a weak or medium-sized vine it is well to cover the roots but two or three inches, and fill up the hole with stones, brickbats or even sticks of wood. Later in the season or in the fall, the earth taken out of the hole may be returned.

It is very important that the roots of no other plant occupy the soil near the newly planted vine. Its roots will stand a poor chance among those of an established tree or vine. Neither should strong growing varieties be planted near weak ones. Many a grape of real merit has been condemned as a poor grower because such gross feeders as the Concord have robbed it. I have an Israella vine that has struggled between two Concord nine years, and has made but little headway, while they are increasing in strength. Few people have any idea of the distance a tree will send its roots. I read of a gardener who cut down a row of elms because their roots interfered with the flower beds three hundred feet distant.

Distance Apart.

That vines may be set three feet apart, each way, and be kept in bearing condition, I have no doubt. Thirteen years ago I planted a lot of vines in a row thirty inches apart, and two in a place. The second year I allowed one in each place to bear a large crop, and then cut it away in the fall. These vines have remained in good condition ever since, although as much fruit might have been produced if they had been thinned first to five feet apart and then to ten. I have seen a row of two-year-old Catawba vines that were started from cuttings and remained where they grew. They were thinned to twelve inches, trained on stakes and allowed to bear. They were as healthy as one could wish, and produced fine clusters.

The above cases are given to show what may be done—not what should be done. My experience leads me to believe that a

vine is more likely to continue in health if it be allowed to increase in size—to have more room each year. In nearly every instance a thinning of the vines in a vineyard has been followed by satisfactory results. One grower who has thinned till his vines stand 15 feet apart each way, claims to have found the best distance. For a vineyard I prefer about eight feet each way, and for a town lot I would put them in wherever I could find room. It is well, when vines are worth but a few cents apiece, to plant two or three times as many as are wanted, and the extra ones may be allowed to bear heavily—one half the second year, and the other the third, and then be cut away. This gives the permanent vines a fine chance to get strong before they bear. A vine may be extended to any distance along a trellis or support, but it requires time. It should not be lengthened more than two or three feet in any direction in a single season.

Choice of Varieties.

What to plant is an important question and should be carefully considered. Very much will depend on the grower. If he understands the wants of the vine, and can supply them, he can raise any variety, and should choose only such as are desirable. The Delaware, Catawba, Iona and some of the newer varieties are so fine that when one becomes acquainted with them, the Hartford, Ives, &c., can hardly be tolerated. It is very unsatisfactory to spend money, time and skill in raising an inferior article—especially if it be for one's own. It is always well for beginners to plant some Concord and Worden vines, for they are very reliable and quite good.

Preparation of the Soil.

To prepare the soil for grapes, is to make it dry and rich. If you want to do more than this, make it drier and richer. It is not sufficient that it be well under-drained, so that water will not lie, but the surface water should be allowed to get off before the ground becomes saturated. Then plow and harrow thoroughly, as for any other crop.

Fertilizers.

Thoroughly decomposed barnyard manure is sufficient for the grape or any other crop we cultivate. In its absence, bone dust and ashes answer all purposes. Nitrogenous manures cause a rapid growth, but they should never be used where the highest flavored fruit is desired. The choicest wine is made from grapes grown on poor, rocky hillsides, and when it becomes necessary to use a fertilizer the next crop is made up and sold under an assumed name, lest the brand be brought into disrepute.

Manure should be applied in the fall after the grapes are gathered, so that it may leech into the soil during the winter. Grape roots have a special liking for bones, and seem almost to know where to go to find them. A Delaware vine sent a root some distance to a hole in which bones had been buried, and then it branched and nearly surrounded every bone with roots. The owner prized the vine, and would not have injured it willingly, but in spading he accidentally cut the root leading to the hole. The vine died and he ascertained that it had drawn nearly all its food through that one root.

Eight or nine years ago, when the Lady grape was introduced, I obtained one and planted it as follows: I dug a hole four feet in diameter and two feet deep, and nearly filled it with cows' heads from the slaughter-house. I then filled in among the bones some good soil and planted the vine, and then sodded it over. The turf has never been removed since, and the vine has done well from the first, although I have no doubt but that the roots of the Concord and Worden near by are trying to get the bones away from the Lady.

Is it not encouraging to think that on ten feet square of ordinary land, a boy may dig in a wheelbarrow load of bones, and a bushel of ashes, plant a vine worth ten cents, and then cover the space with grass, and that vine will go on changing those bones into fruit, producing bushels every year until the boy becomes an old man? All the vine will need is a little trimming and a place to hang out its leaves.

Choice of Vines.

The majority of the vines are grown in the open air from cuttings. If they have ripened at least a foot of wood, and their roots have received no injury, they are safe to plant. Layers of the best quality, from bearing vines that have not been weakened in any way, are still better, while those made from green wood, late in the season, are almost worthless.

Vines made from single eyes, started under glass early in the season, and grown with skill and care, are superior to those grown in the open air. New, high-priced varieties are usually grown in this manner. It is, however, possible for a very poor class of vines to be grown under glass. I once received 1,200 Delawares so small that a man could have carried them under his arm. They had made a growth of twelve or eighteen inches, but had mildewed and lost their leaves before they had well commenced to ripen any wood. With all my care I saved no more than a third of them. Any good propagator can raise vines from single eyes with from six to eight feet of ripe wood in a single season. Indeed, this is less than one-third of what has been accomplished with the best efforts.

Last spring I sent east for nine vines of a new variety. They were received in good condition and in perfect health, but rather small. Being anxious to give them the best possible chance, I took a medium sized potato, cut it in two, and scooped out a cavity in each half. Into this cavity I put the nine vines, root and branch, with some moss and a label, put on the other half, and mailed them to Charles Carpenter, of Kelly's Island, one of the most successful propagators in the country.

Summer Pruning.

A vine needs some summer pruning—enough to regulate its growth. No matter what care and skill may be exercised in pruning and tying up before the growing season, some buds will start with greater vigor than others, and unless they be stopped early in the summer, they will appropriate to themselves more than their share of sap, leaving other parts of the vine in a starving condition.

It is the vine grower's place to see that all have an equal chance,

and he should be on the lookout and nip the ends of these would-be monopolists, and while they are recovering, the weaker shoots will catch up, and perhaps hold their own. This much seems necessary to equalize the growth. Besides this, we must see that the fruit has a fair chance to ripen, and that good bearing wood be provided for the next season; for without such provision, fine fruit can not be produced. A vine in vigorous growth sends out a lateral at every joint, and these should be nipped off beyond the first leaf when the best results are desired. This should be done early. By this means the main cane with its leaves and fruit will receive the sap instead of its being wasted in the production of useless laterals. This will greatly enlarge and strengthen the leaves, and give more chance for light and air among them.

Some varieties keep on growing until quite late without ripening their wood. This can be remedied by stopping the shoots when they have grown far enough. Unripe wood accompanies unripe roots, and neither are desirable. The above, if faithfully carried out, is the perfection of summer pruning, and is really nothing but the prevention of useless growth. The removal of any considerable amount of foliage in the growing season is weakening to the vine.

Pruning and Training

Constitute the important part of grape culture, and without them there can be no permanent success. A vine on trees, with plenty of room, will flourish with little or no pruning; and a young vine on a trellis will endure bad pruning for a time; but a poor method, or a good method poorly carried out, will ultimately result in failure. We prune to enable the vine to mature the greatest amount of fruit, with a satisfactory amount of wood for the following year. To do this intelligently, one must know something of the habits of the vine, the treatment to which it has been subjected, and the fertility of the soil in which it grows. There is enough in this subject for an entire essay, and I can do no more here than to give a few suggestions.

Before a vine can produce fruit, it must have bearing wood; i. e., well matured canes of the previous year's growth; and as the sap tends toward the extremities, especially the top, this bearing wood must be left on a level as far as possible. Otherwise the sap will flow past the lower buds and force the top ones into a rampant growth. For this reason it is entirely useless to attempt to cover any considerable amount of vertical space with a single vine, and expect it to bear above and below at the same time. With a majority of people it requires but a few years to get all the bearing wood to the top of the trellis. Where a cane of even two or three feet is left to bear, it must be bent to impede the flow of sap, in order that all the buds may start alike. If this be properly attended to, each bud will get its full share, the growth will be uniform, and but little summer pruning will be needed.

The proper amount of wood to leave for bearing depends on the age and strength of the vine, the fertility of the soil and the trellis accommodations, and can be best learned by experience. If allowed to over-bear, the wood and fruit will fail to ripen, and the vine will be weakened, if not permanently injured. If pruned too close, a vig-

orous growth will follow, but little fruit will be produced, and, unless well summer-pruned, the usefulness of the vine will be injured for the following year, and the evil tends to perpetuate itself. The bearing wood should be evenly distributed over the vine, and about the same amount should be left on each arm.

Diseases.

The grape, like all other fruits, is subject to disease, especially if its vitality be lowered by any means. Mildew and rot are most to be feared.

Mildew is caused mainly by too much moisture in the soil, and is augmented by a lack of air and sunshine on the foliage. Rapid and perfect drainage is the remedy.

The rot is caused by the spores of a fungus, which, though invisible to the naked eye, are carried by the wind and deposited on the fruit, where they germinate and grow, causing the rot. These rotten grapes lie on the ground all winter, and when the warm weather comes the spores are again sent out, like "smoke" from a puff-ball, and are deposited on green grapes, where the same process is repeated. Now, to prevent this, we must either destroy the spores before they reach the grapes, prevent their germinating on the grapes, or prevent their growth after they germinate. If the rotten grapes could be swept up and burned in the fall, the number of spores would be greatly diminished, especially if our neighbors would do the same. No matter how many spores there may be, they cannot germinate without moisture. This is why grapes never rot when grown on a building under a cornice. A wide board nailed over the trellis answers very well, and paper bags put over the clusters, when the berries are small, and fastened with a pin, or tied on, are effective. It has been known for years that no fungus growth can take place in the presence of carbolic acid, but to Dr. Jewett, the president of our society, is due the credit of applying this remedy to grape rot. One ounce of carbolic acid, dissolved in five gallons of water, and sprayed over the fruit when the rot appears, will stop its progress. This discovery, like all others in horticulture, is given free as air, although no man can estimate its value.

Grapes on Trees.

The grape rarely fails when allowed to climb over trees. It matters not what kind of trees, or whether they be living or dead, if they only have branches that the tendrils can take hold of. Astonishing crops are produced in this way, even on vines that receive no care. The most successful cultivators in the world plant trees and vines together so that the latter may have support. Many unskilled farmers have blundered into the same method and have had abundant success. A vine will make twice the growth in a tree that it will on a trellis, and where an effort is made to have it occupy both, it is always found that its main energies are expended in the tree. A newly planted vine should have brush instead of a stake, as it has no means of clinging to the latter. If the tendrils can find nothing to take hold of, they continue in motion for a time, reaching in all directions, and this is exhausting to the vine. For this reason skilled gardeners often cut off the tendrils. When

growing vines on stakes I have often driven lath nails in convenient places for the accommodation of the tendrils.

Although grapes do so well on trees without much care, let no one suppose that he can accomplish anything by planting vines at the roots of established trees. The soil being preoccupied, the vine will not have a fair chance. Plant it at a distance from the tree to be covered, and after it has made some growth it may be brought to the branches, where it will take care of itself. On nearly every farm there are worthless trees that might be made to carry bushels of grapes.

Testing New Grapes.

People should exercise some common sense in buying new varieties of grapes or other fruits. If one can afford the outlay—which of necessity must be considerable—it is a pleasure to test the new varieties as they come into the market. He is then qualified to report for the benefit of those who may profit by his experience. Until a variety has had a fair trial no man has any right to speak against it. The fact of its being new argues nothing; all were new once.

If one can not afford to buy high-priced varieties, he should in all fairness withhold his testimony in regard to them. It is worthless to others and damaging to himself. It is very unfortunate that in this matter—and most others—those who know the least make the most noise.

The originators of new fruits have done more to advance the cause of horticulture than any other class, and they are clearly entitled to a reward for their labors; and this they can not get without charging a seemingly high price. With the introducer the case is the same. He must publish lengthy descriptions and testimonials, and this is costly and must be met by high prices.

What has been Done.

I have seen the unskilled farmer raise a ton of grapes on a single Isabella vine that grew without care of any kind, save that when its shoots hung in the way they were cut off with a scythe. I have seen six tons of Catawbas grown on an acre of light blowing sand, and as good a crop on stiff clay. I have eaten the fruit of a vine that produced seven bushels the fourth year. I knew a man who sold fifty dollars' worth of Delawares from a vine in a single season.

A few years ago I planted fifty very small Concord vines four feet apart. They received no extra care, and the third year, while yet on stakes, they produced over 400 pounds. I have often known vines to yield over 60 pounds the third year. I once planted an Iona vine four years old, that had been three times transplanted and root-pruned. It was cut back to three eyes, each of which sent out a shoot bearing three clusters. One-third of the fruit was removed, and quite early in the summer the shoots reached the top of an eight foot stake. They were then allowed to grow seven feet further on twine stretched horizontally, at which point the ends were nipped. The vine ripened the forty-five feet of wood and six fine clusters of fruit. The next season two of the

canes were shortened to three feet, and the other to two buds. The three-foot canes were laid down horizontally and allowed to bear over twenty-five pounds of fruit.

R. H. Lodge, Silver Lake, planted a medium sized one-year vine in the spring, and it made sixty-three feet of wood the same year.

DESCRIPTIONS.

Strawberries.

THE CORNELIA.—This variety originated with myself eight years ago, from mixed seed of the Wilson, Duchess, Crescent, Nic-anor, Prouty, and Capt. Jack. It was selected from a large number of seedlings on account of its lateness and size, and these are the principal claims now made for it. The plant is very large and stocky, and one of the healthiest and hardiest in every way. It has never failed to produce a crop. Its blossoms being pistillate and of moderate size, it makes no extraordinary show when in bloom; but as every blossom perfects a berry, the crop is unusually large. It is late in blooming, and for this reason is not liable to be injured by spring frosts. While we have others as large, and nearly as late, no other single variety combines in so great a degree all the desirable qualities of a market berry, together with the quality of ripening its crop after nearly all others have commenced to fail. The fruit resembles the Jucunda in form and size, but is scarcely so bright in color. It is unusually firm, and is not liable to lose its color. It has been expressed from here to Chicago, Boston, New York, Philadelphia and many other places, and arrived in good condition. It was on exhibition last year at the Nurserymen's Convention in Chicago, and at three strawberry exhibitions, where it attracted great attention. At the close of the season when other berries were selling for 12 cents a quart, it brought 20, and sold more readily. The following are only a few of the good things said of it last year:

"This seedling of Mr. Crawford's (the Cornelia) is of very large size, regular form, firm, good shipper, brilliant, glossy red, and altogether the most promising new seedling shown."

The above is from the report of the fruit committee at the strawberry exhibition of the Summit County Horticultural Society.

"Office of A. M. Purdy's Fruit Farm and *Fruit Recorder*, Palmyra, N. Y., 6, 20, 1884

Strawberries received this morning. Basket picked the 18th in very good order, while the ones picked the 17th were spoiling somewhat. They are monstrous and *as good* as they are large.

Very truly, &c., A. M. PURDY."

The judgment of HON. E. N. SILL—who sends the following testimonial—is equal to that of any man in this county. He has all such things grown in great abundance for his own use, by a skilled gardener:

"Cuyahoga Falls, O., June 20, 1884.

MR. MATTHEW CRAWFORD,

DEAR SIR.—The basket of your seedling strawberry, Cornelia, gave us an abundance and most satisfactory dessert to-day—and

it was the unanimous opinion of the family that they had never eaten a berry of finer flavor. Not quite so large as your No. 6 (My No. 6 is the largest strawherry I ever saw.—M. CRAWFORD.) but not less valuable on that account, and its equal in all other respects.

You have had marvelous success in raising seedlings, and I hope that you may be paid the debt which the lovers of this fruit owe you for your endeavors.

Very truly yours,

E. N. SILL."

"On the 26th day of June I visited Matthew Crawford's strawherry plantation at Cuyahoga Falls, from which he had been picking ripe fruit for the preceding three weeks.

All varieties were about exhausted except the Cornelia, a new late variety which is beyond question one of the best and most prolific yet brought out. The plants were strong, healthy and vigorous—had not been petted by heavy mulching, watering or extra care. The drought at this locality had been a severe trial to most vegetation, having had but three light showers in about eight weeks, yet the Cornelia seemed to suffer no inconvenience on account of it. The plants were laden with fruit in all stages, from the smallest to the largest choice ripe berries, many of which measured one and one-half inches in circumference. Their productiveness was a marvel. From a dozen to a dozen and a half of berries could be found on a single stem. The late date of ripening, the rich color, delicate flavor, large size, hardy habits, and its immense productiveness certainly place this at the front as a first-class variety, and Mr. Crawford's years of toil and patient experiments have certainly been crowned with complete success.

WM. PRIOR,

*Associate Editor Cuyahoga Falls Reporter
and Western Reserve Farmer.*

July 1st, 1884.

\$2 per dozen, \$10 per 100. Special rates to the trade. The Cornelia was sold to nurserymen last spring at \$1 each or \$60 per hundred. I will not be undersold on this variety by any responsible party.

NEW VARIETIES.—The Parry, Henderson, Garretson and May King are now offered for sale. They are all sent out by reliable men, and are probably excellent varieties. I have not fruited any of them sufficiently to give an opinion from actual test. My stock of these will come from the disseminators.

MRS. GARFIELD.—A seedling of the Crescent, originated by myself. Plant a vigorous grower, healthy, hardy and productive. Fruit, medium to large, bright red, roundish, firm and very good. Enormously productive and of good size to the end of the season. Blossom perfect.

ATLANTIC.—This has not fruited with me, but has made a very good growth. I give the introducer's description:

"The plant is vigorous and healthy with large and heavy foliage and is very productive. The berries are large, *exceptionally firm*, and remarkable bright, deep crimson color with a bright, glossy surface, ripen all over at once and retain this brilliancy and freshness to a wonderful extent after shipping. The fruit is borne on long stems and the pedicels are also long, and the calyx never

comes off like Mt. Vernon, nor the whole cluster like the Sharpless and others in picking. The bull is large and beautiful bright green and the berry, having a slight neck, renders it easy to remove when preparing for the table. Flower, perfect."

LEGAL TENDER.—From N. J. A very vigorous grower and unusually productive. Fruit medium to large, conical, dark red and of medium quality. It has fruited with me in a small way, and so, I can not say much about it.

JUMBO.—Introduced by A. M. Purdy last season, and claimed to be *very late*, and from five to eight inches in circumference. It is said to be a good grower, enormously productive and of excellent quality. It has not fruited with me, but it is a fine grower, resembling the Cumberland.

DAISY.—Received from Samuel Miller, without description. It is said to be a berry of great promise.

HOWELL.—From same source.

DOWNING.—A desirable variety for either home use or market. Very vigorous, and prolific. Inclined to rust in some localities. Fruit large, of good form and color, and among the best in flavor.

LONGFELLOW.—This needs good cultivation when it is among the very best. Plant healthy and vigorous; a good bearer of very large, dark, glossy red berries of excellent quality.

DUCHESS.—This is a grand market berry, being wonderfully productive and among the earliest. Makes few runners, and needs good culture.

IRON CLAD.—This has not fruited with me, but it is noted for vigor and productiveness. It is said to produce more than any other. Fruit, unattractive, of large size and medium quality.

INDIANA.—A seedling of the Chas. Downing, and said to be a great improvement. If as good as is claimed for it, it must be of great value. It is a fine grower, but has not fruited with me.

BLACK GIANT.—I have not fruited this to perfection, but I have reason to believe that it is a valuable berry. Plant a good grower and bearer. Fruit very large, firm, dark red and of fair quality. Fifty berries weighed sixty-five ounces.

STERLING.—As good a berry as I ever tasted. A good grower and bearer. Fruit, medium to large, conical, with a neck, and never misshapen; color bright scarlet, glossy, and attractive; flesh firm, and not surpassed for flavor.

PHOTO.—One of the very best for home use, but too soft for market. Plant very large, and stocky; a vigorous grower and a good bearer. Fruit very large, roundish, dark glossy red, sweet and delicious. It should be in every collection for home use.

NORMAN.—An early berry of very large size. It is a good grower and bearer. Color, dark glossy red, and it never fades; flesh firm, sprightly, but rather acid.

LACON.—This is a great market berry and is considered better than any other to accompany the Crescent. It is a healthy and hardy variety, and an immense bearer. Fruit, large, bright

red, conical, sometimes slightly ribbed. Flesh, firm, red, and of fine flavor.

GRAND DUKE.—I have fruited this variety three years and consider it a valuable addition to our list of berries. It is a good grower and a great bearer. Fruit large, of good form and color, and of extra quality. Better for home use than for market.

ARNOLD'S PRIDE.—I received this from the originator, the late Chas. Arnold, of Canada. Plant, very large, healthy, and productive, making but few runners. Fruit, of great size, regular in form, of rather light color and of fine flavor. Altogether, this is a remarkable variety.

BRIGHT IDA.—The companion of Arnold's pride, and a very fine berry. It is as good a grower as the Sharpless and bears a heavy crop of very large, roundish, bright red berries of good quality.

PAUTUXET.—Originated with Wm. Saunders on the government grounds at Washington. With the exception of a few plants sent to A. M. Purdy, the entire stock was destroyed by an overflow of the Potomac. I received my stock from Purdy. This berry is not surpassed for beauty of form, color and high flavor. Medium to large, and moderately productive.

BOONE.—Strong, vigorous, hardy and productive. Fruit large, roundish, sometimes flattened, but not misshapen; bright glossy red, and not liable to fade; firm, and of medium quality. I have had this eight years, and know it to be a good market berry.

JERSEY QUEEN.—This variety needs good cultivation, when it is among the most desirable. A very good grower, and perfectly healthy and hardy. Fruit large, very good and fine looking when well grown.

MT. VERNON.—One of the most reliable. Succeeds in all parts of the country. Plant, wonderfully strong and vigorous. One of the last to blossom and ripen, and rarely injured by spring frosts.

MANCHESTER.—A very desirable market berry. It is said to rust in places, but with me it is one of the most reliable. A good grower and bearer. Fruit large, of regular form, and of good color and quality.

The following are well known reliable varieties. They have come to stay, and are being extensively planted for market and home use: Downing, Duchess, Windsor, Captain Jack, Miner, Cumberland, Hart, Sharpless, Glendale, Piper, Sucker State, Primo.

Raspberries.

SHAFFER.—For vigorous growth and great productiveness, this is ahead of any other Raspberry I ever saw. It is of very large size, purple in color, and of good quality. It is of the same style as the Roehelle and Ganargua, but superior to either of them.

Red Varieties.

SUPERB.—This variety possesses more good qualities than any other Red Raspberry that I have thoroughly tested. It is perfectly hardy, enormously productive, and continues a long time in bearing. It contains few seeds, the drupes being large,

and for this reason it will be best suited for home use or a near market. Fruit of large size, and remarkably good flavor. Season, from early until very late.

CUTHBERT.—The best late Red Raspberry yet introduced. A good grower and bearer, and one of the hardiest and most reliable.

HANSELL.—One of the very early red varieties. Hardy, productive, of good size and quality, and of very bright red color. A promising market berry.

CRIMSON BEAUTY.—I have fruited this in a small way, but am hardly qualified to say much about it. The fruit ripened about the same time as the Hansell, and was as large and good. The canes were killed down a short distance.

MICHIGAN EARLY.—Received from the disseminator, F. L. Wright, of Michigan. It is said to be perfectly hardy, productive, of great size and good quality.

MARLBORO.—This is said to be the greatest red raspberry ever introduced. It has been fruited in but few places, but all agree that it is vigorous, hardy, of great size, very early, and unusually productive.

Black Caps.

CHAPMAN.—A variety of great value. Its origin is unknown, having been sent to R. A. Hunt, Euclid, Ohio, by the late M. B. Bateham. It has been extensively grown for the Cleveland market, where it is regarded as the most profitable black cap. I received my stock from Mr. Hunt, and have a fine lot of plants to offer. It fruited with me last year, and I am pleased with it. It is a vigorous grower, perfectly hardy, a good bearer, and not injured by a late frost. Last season nearly all black caps were almost ruined, while it came out all right. The fruit is jet black, of good size and quality, and the earliest of all. With Mr. Hunt it ripened three days before Souhegan. Some people claim this to be identical with the Ohio, but it must be a mistake, as the Ohio is not an early berry.

SOUHEGAN.—An early variety, very much like the Tyler, but not as good a grower with me.

HOPKINS.—A good early berry, but not superior to the Souhegan.

TYLER.—This is, on my soil, the best early black cap. It has very desirable qualities, and I can recommend it with perfect confidence.

BEEBE.—Vigorous, hardy, *productive*, late, and reliable. Fruit, firm, and of good flavor. Color, dark yellow or light tan. Very good for canning. This variety was uninjured by the late frost last spring, when the Souhegan and Hopkins, near by, were greatly damaged.

Currants.

VICTORIA.—The best Red Currant I ever saw. A good grower, very productive, and the latest of all. Bunches very long—sometimes over five inches.

FAY.—I have not fruited this sufficiently to give an opinion,

hut from all accounts it is likely to supersede all other red currants. It was sent out with this description: "Color, rich red. As compared with the Cherry Currant, Fay's Prolific is equal in size, better in flavor, with much less acid, and five times more prolific; also, from its peculiar stem, less expensive to pick."

The Rural New Yorker says: "Fay's Prolific Currant, we are now enabled to say, proves to be all that was claimed for it."

LEE.—A magnificent Black Currant, so much ahead of the Black English or Black Naples that they no longer seem desirable. It is very large, productive, and good. People who dislike black currants are usually fond of this.

Blackberries.

SNYDER.—Generally conceded to be the hardiest of all Blackberries. It is the main reliance in Iowa and through the Northwest. It has proved to be very profitable for market, being immensely prolific. Fruit, medium size, free from core, and of good flavor.

TAYLOR.—Considered hardy everywhere. Larger than the Snyder, very prolific and good. O. B. Galusha, President of the Illinois Horticultural Society, considers it the best in cultivation.

STONE.—This is said to be perfectly hardy, of medium size, very prolific and of good quality.

HARVEST.—The earliest of all, and one of the most profitable. While it is not as hardy as the Snyder and Taylor it has received no material injury when the mercury registered 20 degrees below zero. One grower claims that it endured 27 below without injury. It is only of medium size, but it is so productive, so early, so good, and so salable that it has become a great favorite with fruit growers. It has been shipped 300 miles successfully.

AGAWAM.—This has been called "the sweet herry." It is noted for hardiness, wonderful productiveness, and the very best quality. With good culture, it is as large as the Kittatinny. It is a great favorite in New England, where it is best known.

EARLY CLUSTER.—This was introduced last spring by John S. Collins, of New Jersey. It is recommended by a large number of the most intelligent and reliable fruit growers of that State. That it is a great acquisition there is no doubt. It has not yet been determined how hardy it is, but it has remained uninjured when the Lawton and Kittatinny were winter-killed. Thirteen quarts have been picked from a single hill at one picking. It is the earliest *large* berry, and of the very best quality.

WILSON, JR.—This is *very large*, and a great favorite in New Jersey, where it originated. It is a seedling of the Wilson, and is said to be an improvement on that variety.

Grapes.

WORDEN.—A large black grape resembling the Concord, hut a week earlier, larger, of better quality, not so likely to rot, and more reliable every way.

DELAWARE.—A rather small, red grape of the very best

quality. The vine is a moderately good grower, perfectly hardy, and requires good culture. It always brings a high price, and is generally considered the best variety that has been thoroughly tested. Not liable to rot.

POCKLINGTON.—A large white grape, a seedling of the Concord, and perfectly healthy and hardy. It is being planted extensively on account of its reliability, though only medium in quality.

JESSICA.—A new early white grape of great promise. It is perfectly hardy, even in Canada, where it originated. It is wonderfully productive, and has never failed. Bunch, of medium size; it is very sweet, sprightly, with little pulp and no foxiness. It sells for the highest price.

E. VICTOR.—Originated with John Burr, of Kansas. Campbell, of Delaware, Ohio, speaks of it as follows: "One of the hardiest, healthiest, and most productive varieties grown, and will doubtless take and retain a place among the most reliable and profitable grapes. It is one of the very earliest, and seems to possess every desirable requisite for a garden, vineyard, and market grape. It is purer flavored than Concord, Moore's Early, or any other native early black grape. I believe it will be found suited to all localities where the Concord class of grapes succeeds."

DUCHESS.—I have heard only good reports of this grape, and am satisfied that it is one of the very best. A grower in New York speaks of it as follows: "It is the most vigorous grower I ever saw. The fruit keeps and carries well, making it particularly desirable as a *market grape*. Bunch, medium to large, often eight inches long, handsomely shaped, shouldered, compact. Berry medium, round, of a greenish white color, changing to a beautiful amber when fully ripe, and clings to the stalk with great tenacity; skin thin, translucent, and very firm; flesh tender, without pulp, and in flavor will rank as *best*. Ripens with the Concord; foliage healthy; vine very productive and hardy; has stood unprotected with mercury at 24° below zero without injury to the buds."

JEFFERSON.—A red grape of fine quality. A cross between Concord and Iona. It is, with me, an excellent grower, but has not fruited yet. Charles Downing describes it as follows: "Vine very vigorous and productive; leaves, large, thick, downy; wood, short jointed; bunch, very large, often double shouldered, very compact; berries, large, roundish oval, light red with a thin lilac bloom; flesh meaty or solid, tender, juicy, sweet, slightly vinous, spicy—best for market."

VERGENNES.—"A new red grape originating in Vermont. Vine a vigorous grower, healthy, hardy and productive. Bunch, medium size, moderately compact, shouldered. Berry large, round, dark red; skin, thick and very firm; flesh sweet, pulpy; foliage healthy, thick, medium size, somewhat resembling Isabella, though smaller. This grape is an excellent keeper, and promises, in our opinion, to be a valuable acquisition for profitable vineyard planting. It ripens with Concord."—*T. S. Hubbard.*

NIAGARA.—See Circular.

PRICES.

STRAWBERRIES.

	<i>Dozen.</i>	<i>Hundred.</i>
Parry, each 25c.....	\$2 50	
Cornelia, Henderson, Garretson, May King, each 20c.....	2 00	\$10 00
Atlantic, Jumbo, Mrs. Garfield.....	60	2 00
Boone, Pautuxet, Arnold's Pride, Bright Ida, Grand Duke, Lacon, Norman, Black Giant, Longfellow, Iron Clad, Indiana, Daisy, Howell, Legal Tender.....	40	1 50
Manchester, Primo, Piper, Photo, Sterling, Capt. Jack, Miner, Mt. Vernon, Sharpless, Glendale, Cumberland, Hart, Downing, Windsor, Jersey Queen, Sucker State.....	25	80

RASPBERRIES.

Marlboro, each 20c.....	1 50	8 00
Crimson Beauty, Hansell, each 10c.....	1 00	5 00
Superb, Michigan Early, each 8c.....	60	2 50
Shaffer, Chapman, Beebe, Cuthbert, Souhegan, Hopkins, Tyler, each 5c.....	40	1 50

BLACKBERRIES.

(All grown from Root Cuttings.)

Early Cluster, Wilson, Jr., each 40c.....	4 00	25 00
Agawam, Stone, Early Harvest, each 10c.....	1 00	3 00
Snyder, Taylor, each 5c.....	50	2 00

(Root cuttings two inches long, sure to grow, packed in damp moss, and sent by mail, for one-fifth of above prices.)

CURRANTS.

Fay, each 40c.....	4 00	30 00
Lee, each 10c.....	60	5 00
Victoria, each 5c.....	50	4 00

GRAPES.

Niagara, 2-year No. 1, each \$2 00.....	24 00	
Jessica, Duchess, Victor, Vergennes, Jefferson, each 50c.....	5 00	
Pocklington, each 30c.....	3 00	
Delaware, Worden, each 20c.....	2 00	
Asparagus Roots, 1-year.....	12	50
“ “ By mail.....	25	1 25

THE BEST CULTIVATOR is made by M. C. RICHARDSON, LOCKPORT, N. Y.

Send a postal to D. B. WOODBURY, PARIS, MAINE, if you are interested in flowers. He is in every way reliable, and will do more than he promises.

MATTHEW CRAWFORD,
Cuyahoga Falls, O.

UNSOLICITED TESTIMONIALS OF 1884.

Hillsboro, O., April 21, '84.

The plants you sent me came duly to hand and in first rate order. I should think it must be a pleasure to you to send out such *fine* plants. It certainly is to receive them. It is also a pleasure to deal with one so liberal in filling orders.

G. B. BEECHER.

Petersburg, Va., April 7, '84.

The package of strawberry plants reached me to-day only, though they arrived in the city last Thursday. As usual, they are beauties, in excellent condition, perfectly fresh, the result of the skill and care with which you invariably pack plants.

J. T. ROBERTSON, JR.

North Reading, Mass., April 10, '84.

I received the fifty Cornelia plants by mail, to-day, in fine condition, *good count*. The best plants I ever received came from you and Durand. like your mode of packing. C. S. PRATT.

Belleville, Ill., April 11, '84.

The Tyler plants were received in first rate order. Please accept my thanks for the very liberal count. Not one in fifty would give such good measure.

H. SANDHUR.

Lansing, Mich., May 2, '84.

The plants have been received and are perfectly satisfactory as to quality, count and condition. My judgment awards you the premium for packing, whether for mail or express. EZRA JONES.

Searcy, Ark., May 3, '84.

Plants came to hand all right in splendid condition.

J. B. DEENER.

Dingman's Ferry, Pa., April 19, '84.

The plants came in excellent order. I thank you very much for your liberality in counting, and especially for a *generous gift* of the two novelties. I shall take precious good care of them and, I trust, report a decided success. I never saw such roots as your strawberries have.

G. S. GARRETSON,

Syracuse, N. Y., April, 25, '84.

The package of grapes and strawberries came in good order yesterday. I thank you for your promptness and care and especially for your liberality in making up the optional part of my order.

JOHN T. ROBERTS.

Baraboo, Wis., May 8, '84.

The plants came in splendid condition and are every one growing nicely.

E. K. TUTTLE,

Strongsville, O., Oct. 18, '84.

The plants came in good order both spring and fall. I am well pleased with your square dealing.

LORENZO STRONG.

Caro, Mich., April 28, '84.

My plants came to hand and are all planted and looking nicely. I have heard of honesty, liberality, and perfection, but I saw it all when I received the plants.

H. L. BOSS,

Brentwood, N. Y., March 31, '84.

I have bought plants for nearly twenty years, but was never pleased until I received the Boone from you. E. D. PUTNEY.

GROWING SMALL FRUITS AS A BUSINESS FOR WOMEN.

Prepared by M. CRAWFORD, for the Annual Meeting of the Mississippi Valley Horticultural Society, held in New Orleans, Jan. '85.

It seems to be according to the order of nature that man should face the world boldly and bravely, rather seeking than avoiding its bustle and competition, but that woman should be defended from the rough experiences of life by the stronger arm of a husband, father, brother or son. Were she always thus happily situated there would be no necessity for planning what woman can do:—not that she should lead a useless life,—no person who is able to work has a right to be idle,—but, when woman keeps the home, and attends faithfully to the demands of those vocations which are suited to her, she does her fair share of the world's work. We all know, however, that even in this favored land very many women are dependent upon their own exertions for a living; and not only this, but many, besides earning for themselves have others looking to them for support. How to provide for these is a serious question.

There are many remunerative occupations which are closed to woman by reason of her want of physical strength. She cannot well engage in agriculture. There is much heavy work connected with it which she can not do herself, and if she attempt to hire it done the proceeds will often fail to pay the help. Market gardening is open to the same objection, and both have the added drawback of requiring too much capital.

She cannot find employment as a common laborer. Aside from the barrier of lack of strength, she could not engage in such an occupation without losing much that makes her womanly, and being reduced to the level of a least of burden. This cannot be done in the United States without a radical revolution in public sentiment.

She cannot learn the mechanical trades, nor engage in mining or lumbering, or railroading.

When she turns her attention to the lighter avocations the case is but little better, for though she may get a situation as clerk in a store, or operator in a telegraph office, or other similar position, she must be content with half pay. She may use all needed ability, perfect integrity, and a determination to render good service, but she must do for five dollars a week that which a young man—too effeminate and genteel to work, too ignorant to enter a profession, and too poor to engage in business on his own account—will receive ten or more. We have an opinion of these ambitious young men who aspire to measuring tape, dress-making, or any other light work that a woman could easily do.

When the professions are considered as a means of livelihood, woman is virtually shut out. A very few of her sex have studied law and been admitted to the bar, and a few have entered the ministry. Some have studied medicine, and are doing a noble work in their chosen profession. Still, the number who can engage in the law, the ministry, or the practice of medicine, is so very small that the professions seem hardly worth counting as avocations upon which women can depend.

It is conceded on all hands that women are naturally adapted to the work of teaching, and the number of those who take it up is rapidly increasing; but here again they are subject to the galling injustice of seeing men receive much higher pay for the same work. Even the principal of the high school in so large and enlightened a city as Cleveland, O., asserts that men should receive better salaries than women for teaching, because they will not work for the same. They demand more, therefore they should receive more.

We hear much about the avenues that are open to women at the present day, but, look at the subject as we may, they have not an equal chance with men. Besides being shut out of many occupations by physical incapacity, and working for inferior pay in many of those in which by superior fitness and faithfulness they have gained a foothold, they find themselves elbowed by men, even in those vocations which belong especially to them, as, for instance, millinery and dress-making.

But there is a pursuit in which very few women are as yet engaged, which offers more advantages with fewer drawbacks than any other to which she can turn her attention. This is the cultivation of small fruits. The leading characteristics of this work are such as to recommend it especially to women.

It is not laborious, does not require great physical strength, and yet it furnishes proper and plentiful exercise for both mind and body. There is but little heavy work connected with it, and that little can be hired. It does not require much capital. But little land is required, and no expensive implements. When the business is begun in a small way, and gradually increased, there is scarcely any expense worth naming.

Fruit growers meet with less competition than almost any other class, and next to none from coarse or ignorant people. Their products generally meet with a ready sale, and here, for once, woman has an equal chance with man. When she sends fruit to market no one demands it for half price because it was grown by a woman.

Five fruit sells on its own merits, and while it has no fixed value like wheat, a good article is always in demand at a paying price. No advertising is needed to sell it, and no money is spent in building up a trade. It can be grown

in any part of the country, and there is a market for it wherever people live. The demand for fruit is not based simply upon its being delicious and attractive, it is a real need. The human system has a natural appetite for the combination of acids and sugar that is found in berries.

When we think of the thousands and millions of people who live in cities and raise nothing, we partially realize the extent of the demand for fruits, and the conclusion is that for a long time to come the demand will exceed the supply. True, the market is sometimes overstocked for a day or two, but in such a case the producer can dry or can the surplus. The market for dried fruit is never overstocked.

Small fruit growers have another advantage in the fact that their products come into market in the summer, when people have money, and are liberal in spending it, rather than in the winter, when many are idle, and when those who have employment find that the necessities of life make such heavy demands upon their earnings that they have little left for luxuries.

The advantage of being one's own employer is worth much. No one can fully appreciate this until he has been subject to the call of a bell or a whistle. There is not a single qualification needed for the business of growing small fruits that woman does not possess. Indeed a much larger proportion of women than of men are suited to the work. Farmers in general will let their families go without fruit rather than to raise it, but farmers' wives are interested in horticulture. They raise the flowers, and often the vegetable. They attend to details. They are in sympathy with their pots, and learn their habits much sooner than men do. As a rule they are not so ready to neglect their work as men are. Added to this, they have a "knack" which gives them success. A skillful gardener once said that a woman with a cracked teapot could root cuttings that an experienced propagator with all his modern appliances would fail with. It is not hard work, nor the ability to do hard work that makes fruit growing successful; it is the heart work, the real interest, the carefulness and faithfulness, and good judgment that are put into the enterprise.

Lack of knowledge is no obstacle, for this can be acquired easily and quickly. There are no secrets in fruit growing. Those engaged in it are always ready to communicate their knowledge, and every horticultural society is engaged in disseminating information.

HINTS TO BEGINNERS.

First. Post up on the work. Study your facilities, your land, capital, nearness to market, and ability to obtain needed help.

Secure the control of some good land. It costs as much to prepare and cultivate poor land as rich, and the profits are little or nothing.

Begin in a small way. You will make some mistakes, and will have much to learn. If you do everything well, and at the right time, you cannot attend to much at first.

Plant but few varieties, and only such as generally succeed. You can well afford to do without those new kinds that are "destined to supersede all others."

Be more practical than theoretical.

Be more ready to believe what you see than what you hear.

Take some good horticultural papers, and read them attentively.

Join a horticultural society if there is one within your reach.

Do your work well. Both profit and satisfaction come from a little well done, rather than a large plantation grown in a slipshod manner.

Sell no poor berries. They will injure your credit more than they are worth. Use them, or give them to those who have none, and cannot afford to buy.

Keep your plants growing during the growing season. Injure no roots in cultivating. Plants make their own repairs, but they should be better employed. The force expended in healing a broken root might be more profitably used in building up the plant or storing away nourishment for the next crop of fruit.

All the berry plants do best on land that is rich, moist, —not wet,—and cool. Without richness there is nothing to make fruit of. Without moisture to dissolve the food in the soil it is unavailable, for all plant food is taken up in solution. Without a comparatively cool soil the plants can not remain healthy. Each plant should have plenty of room, and no other roots should be allowed to rob it of food and moisture. The surface of the soil must be kept loose by stirring or mulching, so as to admit air to the roots, for they cannot live without it. As a plant can make its wants known only by signs, he who best understands these signs, and is most faithful in supplying the wants expressed by them, will succeed best.

The fruit grower is an employer, and each plant set out is an employe, which can accomplish much or little, according to the master's knowledge of its needs and his faithfulness in providing for them. Each plant set out is an independent establishment, and if not hindered will go steadily on doing the work appointed to it by nature,—

gathering its food, and changing the raw material, by means of the rain, the sunshine, and the atmosphere, into delicious fruit. It is a pleasant thought that the plants which we set out and care for are so many little helpers engaged in our service, and whether we sleep or wake, whether we are sick or well, they still go on and on with their silent, busy work. It is the fruit grower's province to see that all the conditions are favorable, so that there may be no interruption of this work. His returns will be in exact proportion to his judgment and thoroughness in this respect. This is a point where knowledge is power.

New Strawberries.

PARRY.—"The Parry" was produced from seed of Jersey Queen, planted in the summer of 1880, and yielded the following summer (in less than a year from the seed) handsome fruit which was awarded a first premium at the Strawberry Fair of the Moorestown Agricultural and Industrial Society. After harvest of the same year the unprecedented heat and drought destroyed almost every variety, including a large number of new and old kinds in the plot where the Parry was planted—the Parry, however, endured the severe test with impunity. This circumstance, which at first seemed a disaster, proved a blessing in disguise, as by the trying ordeal those of less vitality were extinguished—demonstrating the sturdy qualities of plant of the Parry; hence another example of "the survival of the fittest." Again in 1883, and also 1884, it was awarded a first premium at the Moorestown Strawberry Exhibition, it having always been awarded first premium when placed on exhibition."

DESCRIPTION.—The plant is a rank, vigorous grower; blossom perfect, very productive, fruit stalks large and stocky. Berries, large, uniform in size and shape, bright crimson color, and very attractive in the box. Quality best. \$2.00 per doz.; \$10.00 per 100.

GARRETSON.—"The plant is a pistillate, is an unusually healthy, strong, vigorous grower, none, moreover, has an abundance of very long roots, more so than any other variety I know of, consequently it stands the extremes of cold and heat remarkably well, and is but little affected by severe drought.

It is a most excellent bearer, producing more marketable fruit than any other kind. It is unlike most of the larger varieties that produce a few large berries and then the rest of them drying off. It is also more uniform in size, every blossom perfecting a berry, ripening its fruit evenly and remaining in a picking condition fully three weeks. It has had only ordinary cultivation for the past three years, and its character is well established. It has never before been offered for sale.

The fruit is globular, of large size, and very regular in shape; of a rich, bright crimson color, and of good quality, is very firm and therefore stands handling well, equal in that respect to the Wilson's Albany, and retains its bright appearance to the last. It was exhibited at the Queens County Fair in 1881, where it took the first premium as best seedling, and in 1883 as the best four quarts of berries exhibited. Some fruit was marketed for the first time this season, was very much admired in our local markets, and brought the highest price of any.

I have been cultivating strawberries for the past fifty years, and am acquainted with and have tried nearly every kind that has been offered, and I can truly say I know of no variety that can equal it as a market berry."

HENDERSON.—"It is doubtful if there is another strawberry in cultivation having such a combination of good qualities as the Henderson. The fruit is of the largest size, early and immensely productive; but its excellent merit is its exquisite flavor. Whether for family or market use the Henderson is certain to become a standard sort; and its strong and healthy growth will adapt it to every soil." \$2.00 per doz.; \$10.00 per 100.

MAY KING.—A seedling of the Crescent, raised by Thomas Lane, of New Jersey. It is said to have perfect blossoms, and to be earlier than the Crescent. Plant, vigorous, healthy and productive; fruit, large, very bright scarlet, and of best quality. It is so early and prolific that the crop from one-fourth of an acre sold for \$30. Those who know this best are loudest in its praise. \$2.00 per doz.; \$10.00 per 100.

New Grapes.

PO'KEEPSIE RED.—"A cross of Delaware and Iona, vine resembling Delaware in wood and foliage, but a much better grower, will succeed where the Delaware will not. Clusters average from size of Delaware to twice as large; and in excellence of fruit is the first one ever introduced in America that can be called perfect. By perfect we mean nothing objectionable in it to eat, in skin or flesh, much better in quality than Delaware. The best wine makers say it makes a higher white and red wine than any American grape.

We have fruited this grape for many years, but have not offered it because of the propagation and dissemination of other new fruits. No grape was ever before so widely known or wanted before sale, and wanted in the North because of its extreme earliness, ripening its whole crop here in August. Is hardy, ripening its wood well in the Province of Quebec."

ULSTER PROLIFIC.—"A cross of the Catawba (which it resembles in size and color of berry and shape of cluster) and a wild grape of the forest, a variety of the *Vitis Estivalis*, which the foliage and wood resembles, the wood

containing the minute thorns of the wild grape. It contains no fox, but the wild type can be slightly distinguished. It has been pronounced by all growers and our best horticulturalists and publishers, in hardness, bearing qualities, and in flavor, the "best grape Caywood ever produced," Duchess notwithstanding. Persons visiting our grounds and tasting many varieties, generally exclaim, "The Ulster is your best." Numbers of persons who read this will affirm the statement.

Public opinion in regard to the Ulster being the most delicious and suiting the masses best of all, will prove true, and we must say that when we go to the vineyard we eat more of it than any other; but we do not think it as perfect throughout as the Po'keepsie Red and Duchess, but that it is the grape for the million, and will supplant the Concord and that class of grapes we do not hesitate to believe. It forms its berries so early that rose bugs never attack it, nor have we ever seen them attack its foliage. It ripens here from the first to the middle of September, and is as hardy as the wildest vine of the woods."

FRANCIS B. HAYES.—"This is a new grape of the Concord class, by the originator of Moore's Early, and believed to be a very promising acquisition to our list of hardy, native sorts. It has been exhibited before the Massachusetts Horticultural Society, for several years, and received a first-class certificate of merit, where it is thus described:

"One very noticeable feature about the Hayes is its hardness. The leaves remain green on the vines until late in the fall, long after the first frosts, and after those of other varieties have dropped, showing at once a constitution not easily affected by cold, and assuring the ripening of both fruit and wood, no matter how late the season."

DESCRIPTION.—Bunch, medium to large, moderately compact, partly shouldered. Berry, medium, globular. Color, greenish white, changing to a fine amber-yellow when fully ripe, skin very firm. Flesh, tender, juicy, and of a delicate texture, and fine flavor, no foxiness.

"Foliage healthy, thick, and free from disease. Vine vigorous, and very hardy. A prolific bearer. Ripens from seven to ten days before Concord."

This grape is now offered for the first time, and will be supplied in first-class, one year, strong roots, at \$1.00.

EMPIRE STATE.—"This is believed to be one of the finest new grapes yet produced; a remarkable result, from crossing the Clinton and Hartford Prolific—a white grape, large and handsome in cluster, early ripening, productive, and excellent in quality. This vine has been grown at Delaware for two years, and has had no superior for vigorous growth and healthy foliage; and I have confidence in its success wherever any of our hardy native grapes can be grown. It endured the past severe winter better than the Concord. I have had repeated opportunities of testing the fruit and find it of remarkable excellence, as it should be, to justify its introducers in paying the enormous price of \$4,000 for the vine and control of the stock. It is claimed to ripen very early—with the Hartford Prolific, and is doubtless one of the most desirable new grapes yet produced. Mr. Ricketts, its originator, says it is the best grape, all things considered, which he has ever produced. I will add, that I have taken special pains to ascertain the character of the Empire State from reliable sources, and have only the most favorable reports. This, taken with my own experience and observation in growing it for the past two years, enables me to recommend it to my customers with confidence that it will prove entirely satisfactory as a healthy, hardy, productive, early ripening, and long keeping, first-class grape of the finest quality, and suitable for the most extensive garden or vineyard planting."—G. W. Campbell. Prices for first-class, strong vines, one year plants, \$2.00 each.

For One Dollar.

I will send by mail, postpaid, any one of the following. If sent by express, *not prepaid*, I will put in more:

1. Four plants each of Cornelia, Junbo, Atlantic and Mrs. Garfield.
2. Three dozens at 40c each, your choice.
3. Five dozens at 25c each, your choice.
4. 2 Marlboro, 2 Superb, 2 Mich. Early
5. 3 Shaffer, 3 Cuthbert, 3 Superb, 3 Beebe, 3 Chapman, 3 Tyler.
6. 5 Agawan, 5 E. Harvest, 5 Taylor.
7. 5 Victoria, 5 Lee, 1 Fay.
8. 1 Duchess, 1 E. Victor, 1 Delaware, 1 Worden.

I will send the 8 collections and 100 Asparagus roots by express for \$5.00.

For \$3.00, 1 Niagara Grape, 1 doz. Cornelia Strawberry, and either of the following for 1885: "Green's Fruit Grower," "Farm and Garden," or "Farm Journal."

For \$4.00, 1 Niagara, 12 Cornelia, and "The Rural New-Yorker" for 1885. The "Rural" is the best weekly agricultural paper in the country.

For \$5.00, 1 Niagara, 1 Po'keepsie Red, 1 Ulster Prolific and 12 Cornelia.

I will send the "Fruit Recorder" (\$1.00) and "Green's Fruit Grower" (50c) to any address for \$1.00.

My No. 6 Strawberry will not be sold this spring, but next July I will send a full account of it, and some others, to all who are interested. For this reason I want the names of all who grow small fruits, either for home use or market. Address

M. CRAWFORD, CUYAHOGA FALLS, O.

Des Moines, Iowa, April 30, '84.
The plants are received all right and I thank you for the extras.
C. H. GOOD.

Bridgeport, Ind., May, '84.
Plants were received in good condition and were very fine.
ALBERTSON & HOBBS.

Bowling Green, Ky., April 14, '84.
Plants very fine and in good condition.
A. D. WEBB.

Winsted, Conn., May 12, '84.
The plants came in good shape. I set them out next morning and they are now looking fine.
S. T. SEARS.

Circleville, O., April 12, '84.
Plants arrived all right and in first-rate condition. Accept thanks for liberal count and extras.
N. W. JULIAN.

Springfield, Mass., May '84.
The Cornelia came to hand and are very fine plants.
J. W. ADAMS.

Shelburne, Vt., July 31, '84.
The Crawford's No. 1 strawberry was received this morning, in fine condition. The roots were not dried in the least.
W. H. RAND.

Janesville, Wis., Sept. 9, '84.
The plants you sent me came in fine condition.
F. W. LOUDEN.

Hillsborough, O., May 3, '84.
The stuff I got of you 'is growing nicely. Am glad I found you out, for I think you are a CAREFUL propagator.
C. B. MOORE.

St. Johns, Mich., May 6, '84.
Strawberry plants received in due time and all in first-rate order.
J. M. CURTISS.

Atlantic, Iowa, May, '84.
Cornelias arrived this morning and they are planted out. *Many thanks* for your liberality.
R. D. MCGEEHON.

Portland, O., Oct. 13, '84.
The plants came in nice shape. If you treat all customers as you have me, I think you will not sell many plants by the 1000.
C. G. KNOWLES.

Oswego Center, N. Y., April 26, '84.
The plants ordered were received to-day. They are very nice and came through in first-class condition. Accept my thanks for extras. As I did not expect so many, I was agreeably surprised.
W. S. GRAHAM.

Sidney, O., Sept. 22, '84.
The plants came in *excellent condition*.
J. S. CONKLIN.

Dayton, O., April 23, '84.
The plants ordered of you were received in good condition. Accept thanks for promptness and liberal counting.
THEO. LONGENECKER.

Limaville, O., April 26, '84.
Plants received to-day all O. K. and in prime condition. Manner of packing excellent. Thanks for extras.
F. E. LAWRENCE.