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THE GUEII PLUM.



INCE plum culture is becoming so important a department of the fruit-growing industry of Ontario, and so many of our growers are desirous of becoming acquainted with the best and most profitable varieties, it will be certainly opportune for us to devote somewhat more attention to this fruit in our pages.

Our attention was drawn to the Gueii plum at the last meeting of our Association, in the City of Hamilton, by Mr. S. D. Willard, who is an experienced plum grower, and has much success in growing plums for market. Being asked what six varieties were the most desirable for home use, he gave the following list: Bradshaw, Lombard, Gueii, Hudson River Purple Egg, Peters' Yellow Gage and Coe's Golden Drop. The same varieties were, for the most part, valuable in the commercial orchard.

In answer to an inquiry concerning his experience with this plum, Mr. Willard writes: "The Gueii originated at Lansingberg, near Troy, in this State, and has been fruited in this vicinity for several years. It is a rich, dark colored plum, with a beautiful blue bloom, rendering it very attractive as a market fruit. It is very hardy and very productive, and has been constantly growing in favor since its introduction. It ripens about the time of the Lombard, and is in every way superior to that variety."

Noticing the Gueii plum among the exhibits at the Industrial Exhibition at Toronto last month, we corresponded with the exhibitor to get his experience.

They were shown by Mr. J. K. Gordon, of Whitby, a gentleman who has carried off more prizes for plums than any other plum grower that we know of. He has collected over seventy varieties of plums in his orchard, and is a great enthusiast in their culture, and is constantly adding to the number. His experience with the Gueii, is not so favorable as Mr. Willard's, for in that district he has found it very subject to rot. Here is what he says: "In reply to your letter asking for my opinion of the Gueii plum, I beg to say that the tree grows to a fine size, and though rather long in coming into bearing, is fairly productive of medium to large fruit, and, though not a dessert, is a very fine plum for preserving with sugar. But with me it has one great fault, which utterly condemns it in my estimation, namely, it rots badly. Last year, though both my trees of it were well loaded, I did not pick from them one sound specimen, and this year, though the rot was not prevalent among my other varieties, I lost at least two-thirds of my crop of the Gueii, and my intention is, to graft it over with another variety in the spring."

It is hardly fair, however, to condemn so excellent a plum for this unfavorable experience reported from a single locality, and it would be well if other growers who have fruited this variety would report as fully as possible concerning it.

Among the growers along the Hudson River, this new variety is regarded as most valuable for market purposes.

In general, the Gueii plum may be described as follows: Fruit, large, deep bluish-purple covered with thick bloom; flesh, yellowish-green, coarse, sweet and pleasant; a great bearer; very early; the tree is hardy and a rapid grower; fruit ripens from the first to the middle of September.

DAHLIAS.—These flowers for autumn blooming, are receiving increased attention, and the single-flowered varieties are gaining rapidly in popularity as they become better known. They are easily cultivated, increase rapidly, and a stock once procured can be kept from year to year as long as desired. By starting the roots early in pots in the house they can be brought into flower before the middle of summer if that is desired. But it is a great point in their favor if they bloom late, when many kinds of flowers have passed away. The tall growing, the dwarf and the handsome single varieties, make a great stock to select from, and one has ample opportunity in them to indulge his fancy.—*Vick's Magazine.*

KEEPING GERANIUMS.—The old method of hanging geraniums by the roots can hardly be called a good one, as too many will die. The better plan is to trim pretty severely and set closely together in boxes; keep rather dry and re-pot in spring.—*Floral Instructor.*

NOTES FROM MAPLEHURST.—III.

PACKAGES.



THE question of the most suitable packages for our choicest fruits is a very important one and one that will never be fully settled, because we as growers are becoming more and more fastidious in our requirements, and our basket factories are constantly improving their appliances with a view of meeting our wishes. The patent cover made at Walkerville has already been illustrated in these columns. It works well, and the only objection to its use is its expense. Two cents is rather a high price to pay for a cover to put on a basket which is itself only worth three and a-half cents. The leno cover, which we have been using so constantly during the last ten years for almost every kind of fruit, costs about one cent per basket, which is enough money certainly in these days of low prices. It shows the fruit to good advantage, and, were it not for the piling of the baskets in our express cars, nothing more would be needed; but, until better arrangements for carrying our fruit are furnished, it will be necessary for growers to consider how best to protect their fruit from injury.

The tribow basket is becoming popular with growers at Winona. The illustration (Fig. 50), taken from a photograph, will give our readers a better idea of this basket than we would possibly do by a description of it. Tribow means simply three handles, and in this consists its peculiarity. The handle serves as a complete protection for the fruit. The baskets may be piled upon one another, as high as may be necessary, without injury to the fruit; and further, the handle will so separate layers of baskets from one another as to afford a free circulation of air, which is certainly an advantage in a long shipment. The same objection is made against the use of these baskets as against the protection cover, because the cost of the leno and the extra handle about equals that of the patent cover.

A two-handled basket has been lately invented at Grimsby with a bar across the top from one handle to the other. This would seem to answer the same purpose as the three handles and could, possibly, be made at a less expense.

Our own habit has been to use the ordinary baskets and to slip wooden covers over the leno for protection, upon which the address is neatly stencilled; but this is not an economical plan. A great deal of fruit is put up in small packages, which would be much better sold in larger bulk. Thus we find a great quantity of apples coming into the market to be sold in 12-quart baskets, instead of in barrels, and we also see many grapes going into the market in three and five pound baskets, instead of the fifteen and twenty pound baskets. Peaches and pears, too, are sometimes put up in six-quart baskets,

instead of the ordinary 12-quart size. Now there is only one excuse for very small packages, and that is, where the fruit is of extraordinary beauty or size, and therefore will command extraordinary prices. It is always better to put up ordinary fruit in ordinary packages, as there is less expense about packing and less trouble to the salesmen in handling them. Besides, it is very inconvenient for railway companies to handle large quantities of fruit in small baskets. No wonder the agents and trainmen become impatient and throw about the baskets in such a reckless fashion, or that the Grand Trunk Railway

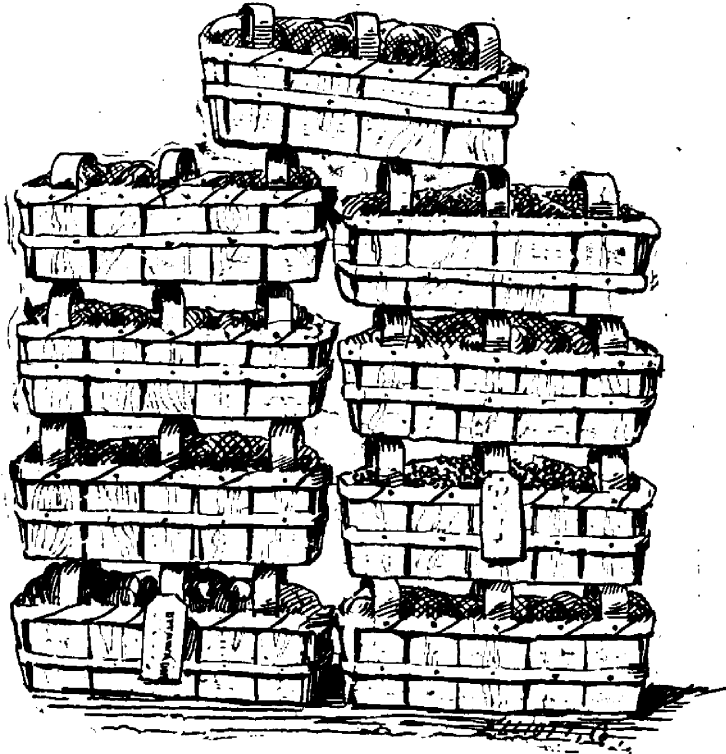


FIG. 50.—THE TRIBOW BASKET.

officials should have become impatient of delays and given an order, as they did the other morning, that the daily express trains were to stop no longer than was needful for the accommodation of passengers. Several hundred baskets of peaches were, in consequence of this order, left behind at Grimsby station, notwithstanding the angry faces of the many shippers who were waiting to see their fruit safely aboard.

One thing is certain, and that is, that the rapid growth of the fruit industry requires accommodations from the railway companies not yet thought of. Fruit

trains run on passenger time on the American roads, to their great cities, and why should we not have a similar consideration?

GLUTTED MARKETS.

The glut of summer apples and early peaches during this season of 1891 has somewhat discouraged our high hopes with regard to the profits of growing them. Between two and three thousand baskets of magnificent Red Astrachans seemed prospectively to be a mine of wealth, but when beautiful fancy apples came to our Canadian cities in car loads from the Hudson River district and other fruit growing centres of the United States, our markets were so completely blocked that it was difficult to find a profitable sale for even extra fine stock.

Notwithstanding this, the Red Astrachan, in our opinion, cannot be surpassed as a summer market apple. If each specimen is gathered just at its highest state of perfection, surely no apple can surpass it for beauty, and, handling it in this way, we were able to dispose of the crop at fair prices, even during such an unfavorable season as this one.

The Niagara District Fruit Growers are helping the fruit business of Ontario by opening up trade with Winnipeg, and, through an arrangement with the Canadian Pacific Railway, have shipped car loads of summer apples and other stock to that city, where they are selling at remunerative prices. The great North-West may yet prove to be a fine market for our early fruits.

Good use may be made of the second-class grade of early apples, which are never fit for the market, in the way of food for stock. A few quarts of them may be cut in pieces and fed daily to each cow. She will relish them highly and her flow of milk will be much increased thereby. The horses, too, will enjoy them as an addition to the daily ration and will eat their other food with greater relish. The pigs which are shut up in small yards should by all means have a share, and if the sheep and hogs have the run of the orchard to pick up the fallen fruit—which is almost always unfit for sale—the result, in flesh, will be highly satisfactory.

What shall we say of the early peaches, such as Early Canada, Alexander, Hale's Early, etc., which, notwithstanding their fair exterior, never seem to ripen perfectly and so soon begin to decay? No wonder the prices fell to forty cents a basket, a figure very little above that which was being paid us for extra fancy Red Astrachans. The lesson seems to be to plant no early peach in any quantity, unless it be the Early Rivers, which is truly a first-class peach and meets with much favor in our markets.

The Petite Marguerite Pear has borne with us this year for the first time and commends itself as worthy of some attention from growers. It is a delicious dessert pear of medium size, greenish yellow skin with brownish red cheek; ripening about the end of August, just in advance of the Bartlett. The flesh is fine, melting, juicy and of the highest quality. Its color, however, is not the best to make it a fancy market pear.

PLAIN DITCHING.

Little success can be expected on most soils in growing small fruits, without proper drainage. A large plantation of Cuthbert raspberries, planted upon clay loam, has been an utter failure. The bushes have been stunted in growth and have borne very little fruit, and this of a small size, almost unfit for shipment. The soil seemed in every way to be rich and very suitable, for a plantation of larger fruits grows on it with much vigor, plums and apples being planted in a portion of the same field. The secret is evidently lack of drainage, for in those parts of the farm where this has been systematically attended to, the Cuthbert is a most decided success.

The grading of ditches and drains is a very important matter, and one which is often done too carelessly, resulting in the tiles being frequently filled with sand or other rubbish. Our custom of grading has been with the use of a spirit level, laid upon stout boards along the bottom; but a much better plan is given in *Farm and Home*. It consists in setting stakes four feet apart, along the line where the



Fig. 51.—PLAN FOR EXACT GRADING.

drain is to be laid; laths are tacked across from stake to stake, as here illustrated. Across the top of each a cord is run, and the whole arrangement so placed that the line is the exact grade, which is desired at the bottom of the drain. When this is done, any one can dig the ditch and grade it, using a rod long enough to reach from the line to the bottom of the desired ditch.

HOW TO GROW FRUIT.—A novice, anxious to learn fruit raising, would do well not to select less than four, nor more than ten acres, of his best corn land. It ought to be heavy rather than light, well drained, on reasonably high, airy land, but not exposed to sweeping winds. On this plant apple trees fifty feet apart. Peach, plum, pear, and cherry trees can be planted in rows intersecting the above each way, leaving the completely planted orchard in rows twenty-five feet apart. Plant but few varieties and only those doing well under similar conditions. Experiment with no new or wonderful things. Keep to the beaten paths. Devote this land to fruit exclusively. Keep all domestic animals, except poultry off of it. Manure it every year. Plow it at least once and cultivate it several times each year. Allow no grass or grain to be raised in the orchard, except corn while it is young. Prune carefully every year and keep up a vigorous fight against insects and vermin.—P. W. KING, *Greene County, N. Y.*

STONE FRUITS.



STONE Fruits and their Propagation," is the subject of an interesting paper read before the Iowa State Horticultural Society, by Prof. J. L. Budd, of Iowa, which appears in its transactions for 1890. In speaking of the varieties of cherries which succeed in Iowa, he says that in the southern half of the State the varieties which have given satisfaction during the last ten years are the *Wragg*, *Ostheim Weichel*, and *Montmorency Ordinaire*. Of the dwarf Russians which have been tested, he says that the *Shubianka*, on hardy roots and on dry soil, has been successful as far north as the 44th parallel. It belongs to the Vladimir family, and grows in bush form. It bears well at Ames, and he believes that it will have the greatest value. For dessert, or canning, it is better than the English Morello or Wragg.

In speaking of the propagation of the cherry, he does not favor the use of the *Mahaleb* stock, which is largely employed by our Eastern nurserymen, in the budding of almost every catalogued variety. It is, undoubtedly, the most effective dwarfing stock, but on account of its being a distinct species, differing as much from the cultivated cherry in wood, cell-structure, and the habit of flowering as the common apple from the wild crab, or the pear from the thorn, the two woods never make any real union of cells. Some varieties may make very durable trees, if deeply set, so that the roots will finally be emitted from the scion, but nearly all colored juice varieties make such feeble union as to starve the roots within a few years.

The *Mahaleb* is a small wild tree found on sandy knolls and dry rocks over west Europe, with white bark, hard, close-grained, dark-colored wood; small, black, bitter fruit, and flowering in short racemes. The wood, the leaves, the flowers and fruit are so powerfully scented that it is known everywhere as the "Perfumed cherry."

The *Mazzard* stocks of commerce are from the wild red cherry of Europe, which is nearly allied to, and supposed to be the original form, of many of our cultivated varieties, and, in consequence, many of our cultivated varieties unite well with it when grafted or budded upon it.

The Morello stocks he commends because nearly all hardy varieties, so far as known, unite perfectly with its wood; indeed, so favorably is he impressed with this stock, that he has decided to employ it largely for his experimental orchard.

The *Sand Cherry* (*Prunus pumila*) of the North-West, under cultivation grows, on rich soil, with sufficient rapidity to make it a suitable stock for budding. It is the hardiest of cherries and is very closely related to our garden varieties. He commends this for trial.

Speaking of plums, Mr. Budd writes somewhat favorably of *Prunus Simoni*,

or Simon's Plum. He thinks it best planted with plums because of its rather scant supply of pollen. In the past season its fruit was remarkably good in quality for any use. He advises that it should be grown with very low stems and that the tops should be annually cut back one-third of the preceding year's growth.

Of the apricots he commends the *Shense* as very promising. It was grown from a pit sent him by a missionary in Mongolia, Asia. The tree is a strong and handsome grower, and is known to a few in Nebraska as "Acme." Of the southern Russian apricots he has ceased to propagate a single variety. All that he has fruited are small in size, low quality and the trees are not hardy. He would bud the *Shense* on our native *Prunus Americana*, as foreign stock will bring discredit upon it or any other apricot.

Some varieties of peaches imported by the college from north-west China and Asia have been fruited on the college grounds, and, in his opinion, they can be profitably grown upon favorable soil at least 40 miles north of the regular peach belt across the continent. Some of the varieties are a fair size and excellent quality.

MOST folks fail to let grapes ripen sufficiently. They want to pick and eat as soon as the color changes. The perfection of flavor and sweetness are only obtained by hanging long on the vines. I have found that grapes pruned in the spring after the sap starts, ripen earlier than if pruned in the fall.—E. N. SPAULDING, *Hartford County Ct.*

BIG PROFITS FOR A SMALL INVESTMENT.—A fruit dealer once said that he had rather send his men into the orchard and pack the fruit himself, paying the same price, than have the farmers do it. This does not speak well for the way farmers pack their fruit and ship it to market. There is no reason why this should be so, and if a few practical facts are kept in mind the fruit grower might get the money extra for fruit. Have the fruit equal the sample is one thing to keep in mind. Also remember that windfalls, or fruit that has been bruised in any way has no part with the high grades. Grading is everything in selling fruit and gives big returns for the extra pains. One farmer recently gave his experience. He had 8 bbls. of Baldwins. Of these he sorted four, making three bbls. of higher grade and one bbl. of a lower grade. These were marked lot one. The other four barrels were marked lot two. Four more barrels were bought to be delivered to the depot of a dealer in fruit. All of this fruit was sent to a commission merchant with instructions to sell as if they were samples of car lots. The first lot averaged him \$2.20, lot two, of four bbls., \$1.85 and lot three of four barrels, \$1.50. This is a difference of 35c. per bbl. between lot one and two, and of 70c. per bbl. between lot one and three. Can a more forcible argument be given in favor of the greatest care and thought in preparing fruit and shipping it to market in first-class condition.

BONES AS A FERTILIZER.

SIR,—Could you give me any information in your valuable book how to dissolve bones to make them fit for a fertilizer?



CHAS. MITCHELL, *Port Elgin, Ont.*

UR correspondent has asked a very sensible question. Old bones contain very valuable fertilizing elements, and many farmers habitually allow them to waste about their premises without seeming to have any idea of their value. As we have frequently mentioned in these pages, there are three essential elements required for the growth of plants, and these are, nitrogen, phosphoric acid and potash. Now one source of supply of the phosphoric acid is in bone meal. True, the same element is furnished very cheaply in the Canadian phosphate rock, known to geologists as apatite, of which there are large quarries in the country between Kingston and the Ottawa River. These are being worked most extensively, and the product shipped far and wide, much of it being exported to the Old Country. This ground rock can be purchased for about one cent a pound, and is a cheap and valuable fertilizer for lands that are lacking in this particular element. Fresh ground bones contain about 25 per cent. of their own dry weight of phosphoric acid, and this is worth about five cents a pound. Bone meal, therefore, is worth about one and one-half cents a pound, on account of this particular ingredient. But, besides this, they also contain about three or four per cent. of nitrogen.

Of the value, therefore, of old bones, there is no question, but the great problem is how easiest to make them available for use as a fertilizer; for, if applied to the ground whole, many years should elapse before they would be sufficiently decayed for the plants to make use of the phosphoric acid which they contain. One method is by reducing them with sulphuric acid, but this need not be described here as it is both expensive and dangerous, for unless the acid is handled with the greatest care, one's clothes are sure to be burned and the operator may perhaps receive personal injury also.

The simplest way of reducing bones to powder, is probably by burning and then crushing. This is one which any farmer can operate with little expense, except the time and labor necessary. The bones should be piled with enough dry waste wood to burn them perfectly white. Bones being greasy will make a very hot fire of themselves, so that it will not be necessary to use more than half their bulk of dry soft wood in order to accomplish this. The white ashes are then removed to a plank floor and pounded until they are quite fine. The pounder may be made of a block of wood, sawed square at the ends, to which a handle is attached. This meal can then be sown upon the land or used in connection with potash and nitrate of ammonia, at the rate of four parts to one each of the potash and nitrate, in making a complete fertilizer.

Mr. T. Greiner, who is a constant contributor to the *Farm and Fireside* on agricultural chemistry under the *nom de plume* of Joseph, says, that his method has been to make a large rubbish heap in early spring in some out of the way place, and when this is set on fire he places upon it all the bone accumulations of the year. The ashes which result are then all carefully applied to the land, the value of the wood ashes being largely increased by the added phosphoric acid from the bones which have been consumed; but the phosphoric acid will be better economized by the previous method than by allowing the bones to burn entirely to ashes.

A recipe for fermenting whole bones with horse manure, is described in *Storer's Agriculture* as follows: Soak the bones in water for several days, then pack them in a dung-pit layer with horse manure, taking care to moisten each layer with the water in which the bones have soaked, and with other water as well. Each layer of bone should be about three inches thick, and the layers of horse manure twelve inches thick. The heap is topped with loam. At the end of ten months the bones will be reduced and the mixture fit for use.

Another plan which is very simple is to decompose them by the use of wood ashes. They are first broken up as fine as possible and put in alternate layers with unleached wood ashes, and put in a barrel or hogshead to decay as quickly as possible. The mixture should be kept moistened during several months until the bones have become soft and can be easily broken up very fine. This will probably require six months or a year.

One of the simplest ways perhaps to deal with old bones, especially where only a small quantity is to be treated, is to boil them in a strong lye, either made from wood ashes or by dissolving in water as much caustic potash as the water will hold at the boiling point. This will accomplish the work very speedily. When they are dissolved the mixture will need to be extended many times with dry muck or plaster before it can be applied to the soil. The potash added is itself a very valuable fertilizer.

POWDERY MILDEW OF CUCUMBER.—The powdery mildew of the cucumber is due to the work of a fungus. It attacks the leaves, on the upper surfaces of which it forms at first rounded spots, which appear like blotches of a white powder. These spots gradually enlarge and become confluent, until the leaf is practically covered. The attacked parts of the leaf soon turn yellow, and finally become dead and dry. Under favorable circumstances the disease spreads quite rapidly and is very destructive. Prof. Bailey and Dr. Fisher have found that the fungus may be kept in check by frequent spraying with a solution of liver of sulphur (sulphide of potassium) in water. An ounce of the drug to three gallons of water is strong enough, and will not injure the foliage. A house in which this disease has been troublesome should be thoroughly cleaned and fumigated before the next season's crop is started.—*Farm and Fireside*.

THINNING FRUIT.



THE Horticultural editor of the *Country Gentlemen*, appears to have been making some experiments in thinning fruit, and is convinced that it is of extreme importance. Most fruit growers are too hurried to spend the time needed, but, perhaps, no investment would pay better. Figures 52A and 52B, are drawings which he gives, the former showing the average peach taken from one side of a peach tree which had not been thinned, and where the fruit was very crowded; the latter, one growing on the side which had been frequently and well thinned. Both illustrations show the fruit two-thirds the actual diameter, the smaller specimens averaging $1\frac{1}{2}$ inches in diameter, and the larger $2\frac{1}{2}$ inches. He emphasizes an important point, not often noted in speaking of the advantages of thinning, viz.: the difference in flavor, which is still more worthy of consideration than the size. The objection given to thinning fruit is the quantity wasted, but strange to say, the quantity of fruit harvested from the half of the tree that was thinned until the fruit was left three or four inches apart, was equal to that from the half on which the fruit remained in a very crowded state.

Mr. J. H. Hale, of Massachusetts, thinned his young crop early in July, when the fruit was only about three-quarters of an inch in diameter. He did the work my hand, leaving none nearer than four inches, and the larger varieties farther apart. To do this required four out of every five. The trees so treated yielded the same number of baskets as those not thinned, but the fruit was so improved as to size and quality as to sell for more than double the price. The labor of this is no small undertaking, and this is what deters so many of us from doing it in a systematic manner.

Mr. Hale found that every dollar paid out for this work, returned to him five in direct profit.

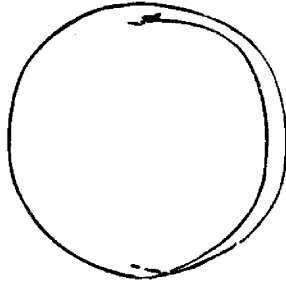


FIG. 52.—A.

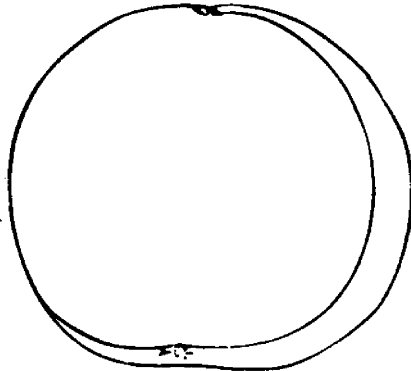


FIG. 52.—B.

IF we were about selecting a dozen kinds of grapes for what is usually designated an amateur's vineyard, we should include the following: Brighton, Delaware, Moore's Early, Vergennes, Worden, Jefferson, El Dorado, Elvira, Empire State, Hayes and Ulster.—*R. N. Y.*

LOSS OF VALUE OF MANURE BY EXPOSURE DURING SUMMER.



SOME experiments made at Cornell, show very plainly that manure rapidly loses its value by exposure. A pile of horse manure was put in a place exposed to the weather and where the drainage was so good that all the water not absorbed by the manure ran through and off at once. It remained exposed from April 25th, to September 22nd, at which time it was carefully scraped up, weighed and a sample taken for analysis.

It was found that the 4,000 had shrunk to 1,730 pounds during the six months, and analysis showed that this 1,730 was less valuable, pound for pound, than the original lot of manure. It had not only lost by leaching, but by the heating or "fire fanging" during periods of dry weather and, the value of the pile of 4,000 pounds had shrunk from \$5.60 to \$2.12—a loss of 62 per cent.

In summing up the results of this experiment, Director Robert says: "It seems safe to say that under the ordinary conditions of piling and exposure, the loss of fertilizing materials during the course of the summer is not likely to be much below fifty per cent. of the original value of the manure."

Further experiments showed that the liquid manure from a cow is worth as much per day as the solid manure, and that the combined value of the two is nearly ten cents per day, if valued at the same rate as commercial fertilizers; that from a horse at seven cents, that from a sheep at one and one-half cent, and that from a hog at one-half cent for liberally fed, thrifty shoats of medium size.

Director Roberts is careful to explain that these values will have to be modified to suit individual circumstances. What he means is that if farmers can afford to buy commercial fertilizers at current prices, then the manures of the farm are worth the prices given.

To pick up windfalls for vinegar may not pay in product, but it will check the breeding of fruit worms. If stock be turned into the orchard for the purpose every tree should be protected if it is young enough to be injured. Remember, it costs much less to care for and preserve an orchard than to plant and rear one.

ON many a small place apple trees are planted for ornament as well as for fruit. Let us recommend for this double purpose the Gravenstein. Shapely, a good grower, the fruit is large and excellent and for cooking it has no superior. As a flowering tree it is superb, being loaded with wreaths of choice, large flowers of a delicate white and highly perfumed. If one has room for but a single tree this variety should be planted.

BLACK ROT OF THE TOMATO.

SIR,—I send you a couple of tomatoes affected with the black rot, which seems to have affected all varieties in this section. I would be obliged if you can give a cause and remedy for it. It affects those upon the ground as well as those suspended. I would be glad to know, too, if the sound portions of those affected would be injurious to those eating them.

J. G. FITZGIBBON, *Norwood.*

The specimens of diseased tomatoes sent by Mr. FitzGibbon present an appearance only too familiar. The tomato rot has been wide-spread during the last five years, not only throughout Canada, but also throughout the United States. Some growers report that as much as one-third of their crop has been destroyed by it.

The cause of this rot is very difficult to explain, but it is a fungus growth which first affects the tomato at the apex and gradually spreads over a large portion of the fruit. (See Fig. 53.) The parts affected soon harden and the whole fruit becomes dried and shriveled, rendering it unfit for market. So far as we know there is nothing injurious to the health in the sound portions of those tomatoes which are slightly affected.

Prof. Bailey is of the opinion that the tomato rot is made worse by the abundant use of stable manure, and the general opinion is that some varieties

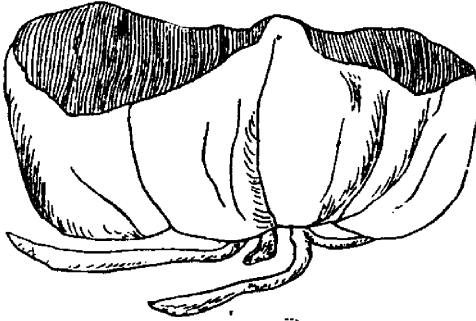


FIG. 53 —TOMATO AFFECTED WITH ROT.

are more subject to it than others. Thus the Acme and the Mikado are very badly subject to it, while the Perfection, Paragon and Trophy are not so easily affected.

To scientists the fungus is known as *Macrosporium tomato*, and consists of a dark-colored mycelium and vegetative system, the growing tubes of which can be readily traced to the cells of the sound tissue of the tomato (see Fig. 54 *d*); and of spores, which are borne on the ends of the branches, called hyphæ, all of which are plainly represented in Fig. 54 *a* and *b*. These are at first dark brown, but at length turn olive-black. When these spores come in contact with either ripe or green fruit they germinate rapidly under favorable circumstances, such as

heat and moisture, and send out slender tubes, as shown at *c* in Fig 54. These spores live through the winter in the shriveled fruit and in old leaves and stems.

Although a great many methods of combatting and destroying this fungus have been tried, yet, so far, none have been proved reliable. Certainly the trouble may be lessened considerably by carefully burning the old vines as well as the old and decayed fruit, which so often are allowed to lie upon the ground through the winter, and thus preserve the spores until another season to continue their destructive work. Other fertilizers than barn manure should be employed; and we would recommend our readers to experiment with the following fungi-

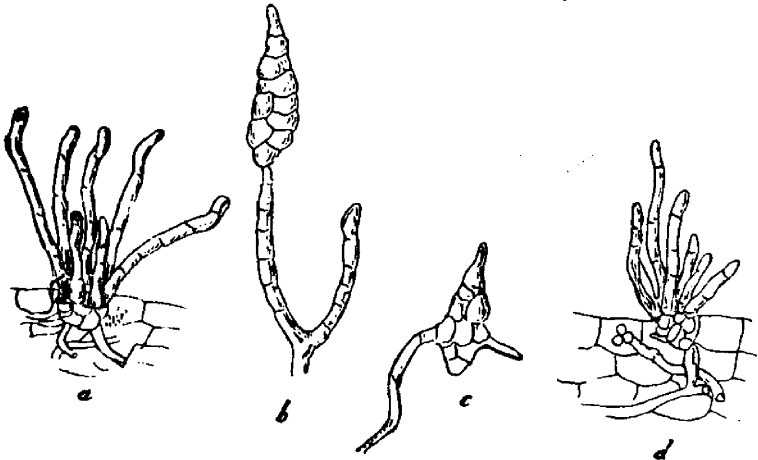


FIG. 54.—FUNGUS CAUSING TOMATO ROT.

icide, which has been recommended by the United States Department of Agriculture: One-half an ounce of sulphuret potassium, dissolved in a gallon of water and sprayed upon the vines so as to thoroughly wet all the fruit. Apply first when the fruit is about half green and repeat at intervals of ten days till the fruit begins to color. For the drawings used in this article, and much of the information, we are indebted to the Report of the U. S. Department of Agriculture for 1888.

EARLY GRAPES FOR MARKET USE.—*Popular Gardening* says there is no better first early grape for market or table than the Worden, unless the newer Moyer, or Green Mountain, should prove such. Moore's Early is not productive enough. The Ives has been largely grown for early-market, but now has an unsavory reputation. It colors early but ripens late, and when fully ripe is really a good grape. But as an early market sort it is a fraud, and one shipper of Ives "has done more damage to grape growers, by restricting sales and consumption, than ten shippers of really good later grapes have been able to repair." Plant the Worden and let the Ives alone.

DANGER OF COPPER.



PROF. GERALD McCARTHY, of the North Carolina Experiment Station, writes as follows to one of that State's papers: In the warfare against the rapidly increasing number of disease-producing parasites, the fungicide most commonly employed in this country is the Bordeaux mixture, which, as commonly made, contains six pounds of copper sulphate to each 22 gallons. To spray one acre of grape vines once, takes about sixteen gallons of this mixture and usually six treatments are required for each season. This gives a total of about 400 gallons per acre, containing about 108 pounds of copper sulphate. All of this copper eventually finds its way into the soil. Copper salts are a deadly poison to all absorptive plants. Is there not danger that the accumulation of this substance in the soil of our gardens and orchards, if persisted in for a series of years, may eventually affect the fertility of the soil? There is very great danger. And let it be understood that when once the soil is sterilized by this poison, not all the guano on the coast of Peru can ever restore it to its former state, or make it fit to bear one blade of grass.

The possible danger of such poisons has already occasioned considerable alarm in Europe. It came up for discussion at the last meeting of the German Association of Naturalists. It was shown that copper sulphate in the soil soon becomes copper oxide, which is practically insoluble and remains in the upper stratum of the soil. The sulphuric acid in the copper sulphate combines with the potash and lime in the soil and with them forms more or less soluble compounds which are washed into the drains, or so far below the reach of most plants as to be practically lost. Its deleterious action is therefore two-fold: it destroys the young roots of plants and causes the useful potash and lime in the soil to leach away. When lime is added to the copper before it is sprayed, the baneful effect of the latter upon the potash and lime in the soil is largely prevented, but its evil effect upon the growing plant-roots still remains. The horticulturist must therefore bear in mind that the fungicides he uses are by no means friends to be depended on without limit. They are necessary evils, to be used with caution and the greatest economy. By hygienic precautions the amount of copper salts used can be greatly decreased.

GRAPE JUICE.—Use thoroughly ripe and fresh Concord or Isabella grapes. Allow one quart of water to three quarts of grapes freed from the stems. Let it come slowly to a boil, and when the whole mass is boiling hot, strain the juice through a cheese cloth, then return the liquor to the fire and as soon as at a boiling point again bottle and seal tightly. The less the fruit is cooked, the brighter will be the color and the better the natural flavor of the grape will be retained. It must be at the boiling point when sealed. A little sugar may be used if preferred. Keep in a cool place.

FRUIT EVAPORATOR.



It is built of wood. All the frame required is the upright, 2 by 2-inch posts and the 2 by 3-inch horizontal drawer rests. The drawer rests are placed flatwise and between the posts, rabbeted one half inch on each inhalation of air. The end drawers are 4 inches deep and 5 feet long, and are used to finish on. Have four extra drawers, and have some extra front pieces to put in and close up the openings when the drawers are out. The sheet-iron fenders, A B, extend the whole length, to distribute the hot and cold air. The cold air enters the ventilators below A, and is divided by B. The arch C is sheet-

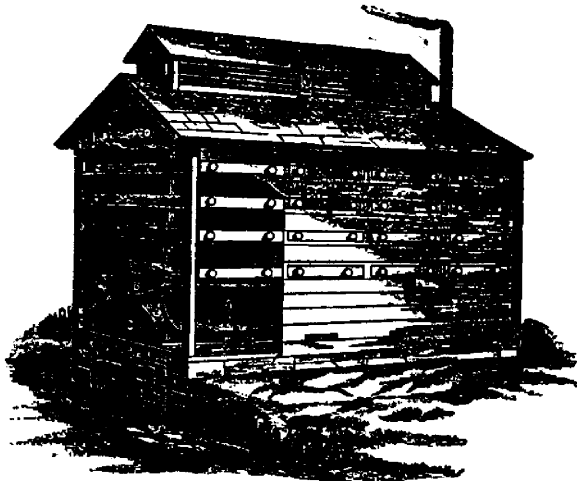


FIG. 53.—FRUIT EVAPORATOR.

iron, with a two inch flange, resting on the wall of the furnace, which is 2 feet high and 2 feet wide, laid in mortar. The top course of brick is laid in mortar, on the flange, to prevent the escape of smoke. The building is 10½ feet long, 7 feet high and 4 feet wide. D D are connecting rods attached to the ventilators. The furnace can be built below the surface on sloping ground. The amount of heat is great, and the thing to be observed closely is to admit plenty of cold air through the ventilators. The illustration, without going into details, gives enough to enable a good workman to construct a cheap and good evaporator that will do more than twice the work of some of the high-priced machines.—J. W. BEACH, in *Farm and Fireside*.

EVAPORATING FRUIT.



THE orchardist must be prepared to utilize the greatest amount of fruit possible and place it upon the market in salable form if it cannot be sold in its fresh state. I have found evaporating the best way of handling second quality apples, and in most years all early fall fruit. Fruit should be evaporated before it becomes over-ripe and soft. The expense of preparing apples for evaporating depends greatly on the size and condition of the fruit, whether badly bruised and soft or not. The fruit I evaporate is nearly all grafted fruit and averages 6 lbs. to the bushel. A lot of natural fruit will average only about 4 lbs. to the bushel. Baldwins and Greenings 6 to 7, Russets, 8. My average expense for evaporating and boxing has been $3\frac{1}{2}$ c. per lb. after getting fitted up, or 20c. per bush. About 10c. is an average price at wholesale for evaporated apple, one year with another. There is usually too great a difference between the wholesale and retail prices, the retail being nearly double the wholesale.

I use an American evaporator intended for bleaching the apple in the evaporator, which is wrong, as it necessitates having it in the fumes of the sulphur all the time it is drying. The apple should be bleached for five to eight minutes in a separate place made for it, as soon as it is cut and spread on the trays, and then put immediately into the evaporator. Treated thus there will be no complaint of smell or taste of sulphur in the apple. Perhaps the expense of evaporating in some localities would be different from mine, from prices of labor, fuel, etc. I employ five persons, (usually females) to prepare the apples at 60c. per day each, and one man to attend the evaporator at \$1. This help averages a trifle over 150 lbs. per day. Fuel (wood) costs \$3, prepared. With apples that take a longer time to dry, it is necessary to remove a part to keep the help employed. In this way it is necessary to have extra trays on which to set aside partly-dried apples for attention later. Three trays can be emptied on to one. This is better than to put it into boxes to be spread on trays again, and the apple looks better. A person must not expect to get rich rapidly evaporating apples, although it pays well in some seasons, but when one has a large lot of apples that will hardly pay for marketing, it is quite a consolation to know that he can use them independently of the market, and get a fair profit from them.

I consider it a safe rule to evaporate all apples that are not worth, at my home, more than \$1 per barrel, without barrel. If one is buying apples to evaporate he should be cautious about getting a great quantity ahead of the parer. One week is as long as they should be kept, unless they are all hard, late-keeping varieties. I am raising a great quantity of apples and should think I was losing a large share of my profits without an evaporator.

Some varieties are at times very scabby which unfits them for keeping well

and injures them for market. I find it best to evaporate all such, unless apples are scarce and dear. I make three qualities of my apples when picking and always evaporate No. 3. No. 2 are quite good but if the prospect is not satisfactory for a good market, I evaporate them also, after getting through with No. 3. No. 1 are extra and bring an extra price. I am satisfied with this way of sorting them.—P. WHITTIER, Franklin County, Me., in *Farm and Home*.

A POINT IN RASPBERRY CULTURE.—Cuthbert raspberries branch near the bottom because they are headed in early in the season, or are cut back too low in the spring. They will branch low if the canes are too far apart. If planted close, say 5 x 7 ft. in rows, or 5 x 5 in hills, they will run up without branching. Then by heading in to 4 ft. in the spring, most of the fruit will be borne on the laterals toward the top of the canes. Sometimes the frost injures the ends of the canes and extreme buds fail to grow, but those near the ground grow rapidly and produce fine fruit, but it is generally too late to be profitable.—S. T. MAYNARD, *Massachusetts Experiment Station*.

PANSIES are the last flowers that bloom out-of-doors—they were the first. Upon the dining table and in the parlor we have pansies, with a spray or so of wild fern, and they are as bright and jolly as ever. Pansies in spring, summer and fall—all the while. Few flowers can talk with you, joke with you, wink at you as can pansies. And then there are serious pansies that will keep you company when you are sad. The rose is the queen of flowers, surely; but the pansy is the flower that the queen would choose, could she speak.—R. N. Y.

WILD BLACK CHERRY.—If we were asked the question: which is the coming timber tree? we would at once answer, the Wild Black Cherry. Our reasons for believing this are as follows:

1st.—It grows to an immense size, often 70 feet in height and 4 feet in diameter.

2nd.—Its timber stands next to Mahogany for cabinet purposes, as it is a very dark red and takes a very fine polish. It is often substituted for that valuable wood in veneering.

3rd.—It makes a rapid growth, growing at least a third faster than the Walnut, and is entirely free from injury by such enemies as insects, borers and rabbits. The young trees transplant as easily as Cottonwood.

4th.—Its fruit is used for pies and dried for winter use. It is also used in the manufacture of wine.

5th.—Its bark makes one of the most valuable tonics known.

6th.—The tree is beautiful. Its leaves are a dark, livid green, its flowers pure white and its fruit a rich black.

With all these qualities who can say that it is not the coming tree and I think all will unite in saying that it should be generally planted.

✧ The Garden and Lawn. ✧

TWO NEW TULIPS.



BY the courtesy of Mr. A. Blanc, of Philadelphia, we give our readers representations of two very curious novelties. We can say nothing concerning them ourselves, either pro. or con., for we have never seen the plants in flower, and we therefore, simply give Mr. Blanc's description of them.

Tulipa Greigi (Royal tulip) is perhaps the most showy and desirable of all tulips. It blooms early; it has large goblet-shaped flowers, being generally of a vivid scarlet color, but there are also yellow and purple-colored flowers. The bulbs are hardy, and even when the leaves are half grown they will endure a temperature of zero without protection. The plants are vigorous, attaining a height of from nine to fifteen inches, and bearing flowers from twelve to eighteen inches in circumference. A number of leaves have undulating margins, the whole of the upper surface being boldly blotched with purple and chocolate-brown. It is the most expensive of all tulips, and so beautiful as to



FIG. 54.—TULIPA GREIGI, OR ROYAL TULIP.

well deserve the name of Royal Tulip. It is suitable as an ornamental plant for the house.

Tulipa Fulgens.—This is commonly called Fiery Tulip, and is one of the largest flowering varieties, often measuring twenty inches in circumference; color of a brilliant scarlet with yellow centre; very showy.



FIG. 55.—TULIPA FULGENS, OR FIERY TULIP.

FALL SOWING OF LAWNS.—We believe in it. An extended experience in lawn making convinces us that there is no better time than this. The Grasses that are suitable for lawns are not unlike Wheat and Rye that are sown in the fall, in the respect that they are perfectly hardy and thrive under the coolness and moisture of autumn and spring weather in a young state better than they do in hot weather. With sowing lawns in September the young grass has the benefit of twice the length of cool, moist weather that spring sowings can receive. Under ordinary success there may be a well established lawn by next July from seed now put in. To prepare for seeding is no difficult matter, provided the general grade and the nature of the soil are about right. Spade up deeply, going down two lengths with the spade, mix fine manure with the overturned soil somewhat freely; see that all sods are well inverted, finish the surface evenly and finely with a rake; a rain, to settle it before sowing, is of advantage. Sow evenly, in calm weather if possible, just before a rain, raking lightly after the sowing. For seed trust to a reliable dealer who handles the best Grasses, either separate or in mixture, for the purpose. Even to procure from a distance is no great disadvantage, for grass-seed is light, with transportation charges to correspond.—*Pop. Gar.*

BULBS FOR WINTER AND SPRING BLOOMING.



OUR lady readers will find much to interest them in the following article from the *Farm and Garden*.

A good list of Dutch bulbs for spring and summer blooming should include the following: Hyacinths, Tulips, Narcissus, Crocus, Polyanthus Narcissus, Anemones, Crown Imperial, Iris, Lilies, Ranunculus, Snowdrops, and Scillas. These are all to be had in many varieties, and are perfectly hardy. The greenhouse varieties are very numerous also, and of these we will speak later.

Soil.—The proper compost for almost all the sorts enumerated above, and many other bulbs should consist of one-third sand, one-third well rotted cow manure, and one-third good garden mould. At the same time it should be remembered that good success may be obtained with almost any ordinary garden soil.

Time of Planting.—All hardy bulbs should be planted from the end of September until December. If the bulbs remain sound, and the ground is not frozen, they may be set out at any time later. If the bulbs are intended for blooming in pots, they should be planted during the months of October and November, in pots of moderate size. They may be left in the open air, covered



FIG. 56.—SHOWING DEPTH OF PLANTING BULBS.

with a few inches of tan or soil, until the soil begins to freeze, when they must be brought into the house; whether in a room or cellar will be immaterial, providing it is a dark place. Occasionally they should be watered moderately, just to keep the soil damp. Gradually expose them as much as possible to the sun, air and light; if not, the leaves will become long and yellow.

Depth and Distance of Planting.—Large Lilies, Hyacinths and Pæonies should be planted to the depth of four inches. Crown Imperials and Polyanthus Narcissus, five inches. Tulips, Double Narcissus, Jonquils and Colchicums, three inches. Crocus, Bulbous Iris, Small Fritillarias, Hardy Gladiolus, two inches. Ranunculus and Anemones, one inch. The depth should always be measured from the top of the bulb. When planting in rows, they should be about ten

inches apart ; and the bulbs may be placed at a distance of from four to eight inches apart in the rows, according to their size. As soon as cold, freezing weather approaches, give the bed a good covering of leaves, hay, old manure, or tan to prevent the frost from penetrating to the bulbs. As soon as the shoots push through it in the early spring, this covering should be removed, taking particular care that the shoots are not injured. The earth may be slightly stirred with a garden fork, so as to make the bed look neat and tidy.

The Japanese Narcissus or Chinese Lily is a new bulb. In China or Japan, no family, however exalted or menial their station, would think of being without it during their blooming season, and it is said that they have now succeeded in blooming it all the year round.

This craze is not only accounted for by their beauty and fragrance or ease of cultivation, but also because they are regarded as a symbol of good luck. The Japs believe that as long as their lily is in bloom, no bad luck can overcome them. Japanese ladies will have them in their parlor while they play their musical instruments. They may be grown in an ornamental bowl, dish, or large saucer, half filled with clean, white pebbles. Place the bulb on these, and fill the bowl or dish with water half-way up the bulb. If placed in a warm position, roots will form at once, leaves will be produced, and in a very short while several flower-spikes will open their beautiful white fragrant blooms.

HOUSE PLANTS IN OCTOBER.—*Windows.*—We don't often build windows for plants, but rather get plants to suit our windows. If practicable, have your windows to open at the top as well as at the bottom. Get the brackets screwed into their places. Have the plant-stands in good repair, nicely painted and all ready. Have a bit of oil cloth for the floor under the plant stands, or along side the windows where your plants are, as now and again you can't help spilling some water, and it is easier to wipe up the water off the oil-cloth than off the carpet. Don't bring your plants into your windows as long as you can safely have them out-of-doors. We generally have some beautiful bright weather in October, cool at night, but warm in the day-time. Let the plants have the benefit of the warm weather, but cover them up or bring them in upon the piazza in the event of cold or wet weather. Toward the end of the month it may be well to house most of your tender plants.

The Piazza.—The piazza is a capital place for pot plants in October. All plants that are established in their pots can enjoy the south side, and those newly potted the shady side. If the plants are standing outside on the walks, in the event of frost, or a windy or wet storm, in a few minutes we can lift them on to the piazza where they will be safe, or if need be, by the aid of some old newspapers or a sheet or two we can make them doubly secure.—WM. FALCONER
in *R. N. Y.*

MAKING GARDEN IN THE FALL.



It seems to be a hard matter for the average amateur to set himself about garden making at any other than in the spring. As a result many flowers, and some vegetables and fruits, that succeed best for autumn planting are either not raised at all or else it is done to poor advantage.

The *hardy Dutch bulbs*, Hyacinths, Tulips, etc., are one class that are much slighted in this respect. To us it is clear that fine collections of these flowers would be much more common could they be planted in the spring along with most anything else instead of being planted in the fall. From September until cold weather is the time to plant them.

Certain kinds of annuals are better for fall than for spring sowing. In nature we may observe that summer and autumn sowing is the invariable rule; seeds drop to earth as they ripen, and spring forth in the same fall or early next spring. All florists, we believe, now sow *Candytuft* and some other kinds in the fall for their first crop of outdoor spring bloom from these.

For a *list of annuals* suitable for fall sowing we would name the following: Alyssum Maritimum, Bartonia Aurea, Calandrinias, Candytufts, Clarkias, Collinsias, Erysimum, Forget-me-nots, Gilias, Godetias, Nemophilas, Saponarias, Silenes, Virginia Stocks, Pansies and Sweet Peas.

Of these all but the sweet peas should be sown between the middle of August and the middle of September. The peas ought not to go in before November, the idea being not to have them germinate until early next spring. Still, we cannot recommend the sowing of annuals in every kind of soil in the fall; the soil for them must be light and well-drained. The chief advantage of fall sowing is that the plants grow stronger, root deeper, and flower earlier and longer than those from spring-sown seed.

In the line of vegetables, spinach, and borecole or kale for an early spring crop are the better for being sown in September. To sow these now in good soil is to secure fine early spring greens that should prove most acceptable on any table. Cabbage, cauliflower and lettuce may also be sown for plants to be kept through the winter in cold frames for an early crop next year.—*Popular Gardening.*

WINTER STORAGE OF ONIONS.—Only bulbs that are perfectly cured, are fit for winter or spring use. Never attempt to keep onions that are not capped over perfectly, and are not entirely dormant, both at top and root part. If they are thus perfect, it will not be a hard task to keep them over the winter, provided we have a dry, cool and airy room, where we can keep them from freezing. Never store them in a large bulk together. Onions will also keep quite well when frozen. Store on the floor of some outbuilding, say fifteen inches deep, and as far away from the wall. When frozen, cover with a two-foot layer of hay; but do not handle them.—T. Greiner, in *Farm and Fireside.*

CHESTNUTS.

CULTURE AND SOIL REQUIRED FOR THE GROWTH OF THE CHESTNUT—USES OF THE CHESTNUT.



IN a bulletin recently published by the Pennsylvania Experiment Station (located at State College P. O., Centre Co.), Prof. William A. Buckhout gives some valuable information relative to the culture of the chestnut.

The chestnut cannot be grown successfully on heavy clays, wet soils or limestone land. It prefers loose, sandy soils, or such as has been derived from the decomposition of slates or shales. In Ohio it is found native on the sand ridges, which border on the lake shore, and on the shaly hillside of some of the hill counties in the southern portion of the State, but never on the limestones which cover the western and south western portions of the State, nor can it be cultivated in this region with any prospect of success.

The chestnut grows readily from the seed, but great care must be exercised not to permit the nuts to become dry. To accomplish this they must be planted as soon as gathered, or else must be kept in moist sand until ready to plant. If possible, the nuts should be planted where the tree is to stand, as the chestnut has a long tap-root which renders transplanting difficult.

Our native chestnut is practically of but one variety; but the European chestnut is not only much larger and finer than the American, but has produced, under cultivation, a number of varieties, some of which are highly esteemed for the superior quality of their fruit. The trees do not grow so large as the American and come into bearing more quickly; the latter does not usually fruit until ten or twelve years old.

Within the past few years species from Japan have been introduced into the United States. Unfortunately they do not appear to be entirely hardy, except in the South and some favored localities in the Middle States. They are quite dwarf in habit, produce nuts larger even than the European, and begin to fruit when they are but four or five years old.

These two characteristics, of small size and early fruitfulness, give them special value, and, if they can be worked upon stocks of the American species, we can secure trees which will bear earlier and produce larger nuts than our native species.

The supply of chestnuts never equals the demand in this country, and many districts in which the trees are abundant derive a very respectable income from the sale of the nuts; it is therefore obvious that this is an industry which can be made far more productive and profitable than it now is, since very little effort has been made towards cultivation.—*Ohio Experiment Station.*

❖ New or Little Known Fruits. ❖

SEEDLING PEACH FROM LUCKNOW.

SIR,—I send you a seedling peach taken from a tree in Mr. W. H. Smith's garden in this village. It appears to be very hardy and has stood the frosts of the north for the past ten or twelve years without injury. This is the fourth season it has produced fruit.

JAMES BRYAN, *Lucknow, Ont.*

The sample was too much decayed for us to pronounce judgment for or against it, but we think it too small a peach to be desirable in the Niagara district where the larger kinds, coming in at the same season, can be grown. This sample is of medium size and apparently a good peach. It may be of value at the north, should it prove particularly hardy.

TYEHURST SEEDLING PEACH.

SIR,—I send you a small basket of peaches of a variety which I grew from a pit some years ago. It has proved to be the hardiest and most profitable of all varieties which I have tried, and I have tried a very large number. Let me know what you think of the peach. There are many varieties of yellow peaches, but this is very distinct from all the rest.

E. TYEHURST, *Leamington, Ont.*

This peach impresses us very favorably, for it is beautiful in appearance and comes in at a time when there is room for a peach of such qualities as it seems to have. The samples are in good condition to-day, 22nd of September, when Early Crawford's are entirely gone, and the varieties in the markets are such as Old Mixon, Late Crawford, Wager, etc., all of which, in our judgment, it surpasses in merit.

It may be described as large, roundish, somewhat flattened both at the base and at the apex, with very distinct suture on one side; skin golden yellow, with crimson on the exposed side; flesh yellow, moderately juicy, sweet and excellent, separates freely from the stone. Indeed, in this respect, it excels almost any peach we know, while it is free from the fault, which the Early Crawford has, of parting in the pit. In our opinion, this variety of Mr. Tyehurst's is one of considerable merit.

THE new Globe Peach is announced as having produced peaches 15 inches in circumference, which is hard to credit. It ripens with Crawford's Late. It is a good shipper, a freestone, and of the best quality.

R. N. Y.



The Canadian Horticulturist

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NOTES AND COMMENTS.

FREEMAN'S Fertilizer Factory, Hamilton, which was damaged by fire several weeks ago, is being rapidly repaired, and will be in running order in a short time.

HARDY APPLES.—E. Reynolds, of Wisconsin, says that the best apples, for that country where hardiness is so important a consideration, are the Duchess, Walbridge, Wealthy, Wolf River and Whitney's No. 20. These will supply farmers with apples during ten months of the year, which is, of course, the chief purpose for which apples should be grown in cold sections.

CALIFORNIAN FRUITS.—This is the subject of a long article in the *Fruit Growers' Journal*, different writers giving their views regarding the effect upon our markets of the immense shipments of fruits from California. The general tenor of their remarks is to recommend more careful grading of our fruits and the use of more fancy packages, in order to place our fruit in fair competition with those from California. The packers there have the reputation of being very attentive to these details. Their fruits are more uniform in size than those put up by our Eastern fruit growers, and they are better graded and put up in more attractive style. We must learn their art if we would not be driven out of our own markets, during the season when their fruits come in so freely.

THE WEEKLY MARKET BULLETIN, which it was proposed to publish during the summer months for the benefit of growers, will not be issued regularly this summer as was intended. The reason is that the Postmaster-General does not consider such a bulletin of the character of those publications to which the

privilege of exemption from postage is extended. Our work, of course, is to distribute information which will tend to develop the fruit growing industry in our country, and mere business details should be left to those who buy and sell. Our Association has no interest whatever in buying and selling of fruit; our work is purely educational. We had thought, however, that the publication of such a bulletin might be of much real advantage to a large number of our members.

KEEPING FRUIT IN WINTER.—Dr. Hoskins writes a very sensible article in the *Garden and Forest* upon this subject. He says that an apple makes as much as one quarter of its growth while its seeds are coloring, and, therefore, it is not wise to gather them before this change takes place; but, as soon as the seeds are fully colored, it begins to deteriorate if left hanging, and, therefore, the gathering should be pushed as speedily as possible when the fruit reaches this point in its maturity.

When the fruit is carefully gathered, the question of keeping resolves itself into a question of temperature. The fruit cellars should be kept as near as possible to the freezing point.

It is important to avoid leaving the apples, after they are picked, exposed to the hot sun, the effects of which would be to ripen them very rapidly and very much lessen their keeping qualities.

PEACHES ON CLAY.—The *Country Gentleman* criticises our statement that peaches will not succeed upon clay soil. The editor states that his finest peaches came from trees which grow on heavy clay soil. This may be true in exceptional cases, especially where the soil has been well drained and well cultivated, but under ordinary circumstances, we should never advise our readers to plant peaches upon clay soil. We have all varieties of soil at Maplehurst and have repeatedly put peaches upon heavy land; but invariably they have succumbed early to yellows, and the fruit, although highly colored, has been small in size. Of two orchards which we planted fifteen years ago, one upon clay loam and the other upon sandy loam, the former was entirely cleared out about five or six years after planting, while many trees of the latter are still in good health and bearing abundantly. We shall be glad to hear further testimony from any of our readers who have had experience in growing peaches upon heavy soil.

THE BURLINGTON FRUIT GROWERS' ASSOCIATION visited Maplehurst in a body. They are a wide-awake company of fruit growers, and many of them are quite largely engaged in the business. Such an Association as this might be profitably formed in many parts of the country, much to the mutual advantage of its members. During the winter time they hold monthly evening sessions of their Association, at which one member reads a paper giving the results of his

experience and observation, and this is afterwards open for discussion by all present. A couple of hours is, in this way, very profitably spent.

In shipping from Burlington to Toronto, the growers there have some advantage over Grimsby growers in the matter of express rates; which are only five cents per 12-quart basket, while we have to pay eight cents.

The gentlemen spent some time in looking through the orchards hereabout, and expressed themselves much pleased with all that they had seen of the Grimsby fruit growing district.

ONE favor is requested of the readers of this journal and that is that each one should feel it a duty to make an occasional contribution to these columns of any items of interest in the line of horticulture which he may have gleaned from his own personal experience or from observation of the work of others. What is needed, to make our journal more mutually helpful to correspondents in all directions, is more frequent letters from every part of the province. If the work of preparing the journal is too much left to the editor, there is danger of its subject matter being written too much from a single standpoint. This would be unfortunate. Our membership extends from British Columbia to Nova Scotia; nearly all the members of the British Columbia Fruit Growers' Association are members with us, and also a large number of the members of the Montreal and Nova Scotia Horticultural Societies. We wish to make our journal interesting and useful to all, and, to this end, we invite liberal contributions from our readers; and we assure them that every courtesy possible will be extended to them in the pages of the CANADIAN HORTICULTURIST.

USE OF APPLES FOR ANIMALS.—F. D. Curtice, of New York, writes an article for the *American Agriculturist*, highly commending the use of apples for animals. He thinks that it is well worth the farmer's while to plant an orchard solely for stock feed, for it would yield when well grown, at least five hundred bushels of apples to the acre. With corn a cent a pound and apples at ten cents a bushel, he says that \$100 would buy 78 bushels of digestible matter from corn and 80 pounds from apples; the corn having more fat, but not being so well balanced for food as the apples. He has been in the habit of leaving bruised apples upon the ground in the orchard, to be eaten by the hogs, and is certain that any one who has not fed swine in this way, cannot estimate the value of apples as animal food. He says that apples fed to a milch cow, will promote digestion and assimilation. At first he would give not more than four quarts twice a day, but this amount may be gradually increased to a peck, making half a bushel a day. The cow will give more and better milk for this extra food. They are also fine food for colts, eaten with bran.

Speaking of apple pomace, he says that a great deal of valuable food goes to waste every year from lack of knowing the worth of the pomace from cider mills. This has a greater value than apples, according to either bulk or weight,

containing a total of nearly 20 per cent. of nutritive value. Apple pomace has a higher nutritive value than roots. It can be preserved in a silo, where, although it will lose some of its nutritive value by fermentation, enough will be left to pay for all the trouble of saving it for pig food. The fermented pomace, he does not consider fit for milch cows, and even for hogs he would give with it some carbonaceous food, as, for instance, a few ears of corn.

WE have just received from Messrs. Woodall & Co., Fruit Brokers, Liverpool, a very interesting diagram, showing the weekly fluctuations of Canadian and American Baldwins apples in the Liverpool market during the last five seasons. It is interesting to notice that in the season of 1888-89, when the total export to Great Britain was about a million and a half barrels, 841,060 were received at Liverpool, and Canadian Baldwins that year reached their highest price in the month of March, which was 14s. 6d. Canadian Baldwins averaged their lowest that year of any of the five. In April, 1887, they reached 25s. 6d.; in April, 1888, 21s. 6d.; in April, 1890, 33s.; in April, 1891, 27s. The total number of barrels received in Liverpool during season of 1890-1, was 263,058 out of 451,000 imported into Great Britain. The largest received in one month was in November, amounting to 88,000 barrels.

From this diagram it would appear that throughout this whole time Canadian Baldwins have sold at a higher price than either New York, Maine or Boston; the next highest, being those from Maine. No doubt this is owing to the better keeping qualities of the apples grown toward the north.

❖ Question Drawer. ❖

QUESTIONS ON PLUM CULTURE.

SIR,—I have an orchard of plum trees; they grow too much to wood, producing as much as three feet per year. Put nothing on them but plenty barnyard manure, chiefly horse manure. They look healthy, and quite free from knot, but as they are the Moore's Arctic, dwarfed, and five years planted, they should bear abundantly; they do not, however. What is the cause? How can I remedy the difficulty? Have sufficient quantity of trees to produce one thousand bushels fruit. Where can I find market at the best price? Does the Moore's Arctic find ready sale? What is the average price per bushel for plums, by the wholesale? Is crude potash good for plum trees? How best put on? When? How much per acre? Name some reliable dealers in fertilizers.

Z. X. Y., Charlottetown, P. E. I.

We would be pleased if some of our readers who have had large experience in the growing of plums, would give a full reply to the above question.

There is no doubt that an excessive use of barn-yard manure will cause a large amount of wood growth, and tend to make the trees unproductive in consequence.

With regard to the best market for plums, it is difficult for us in Ontario to advise our friend in Prince Edward Island. Some one farther east could better reply. As a general rule, the best markets are those which are nearest home, for the express charges and long distances eat up all the profits. It is astonishing how small markets in our country towns can be developed when one continuously supplies their needs. Many people habitually go without fruits which they would be glad to use if they knew where to get a constant supply. The prices received for plums in Ontario, has averaged from 60 cents to \$1.00 per 12-quart basket, or from \$2.00 to \$3.00 per bushel. But such varieties as Moore's Arctic would bring, we suppose, the lowest price, and would not sell rapidly where other varieties are in abundant supply.

Crude potash is an excellent plant food for any kind of fruit trees, but, of course, should be used in limited quantity. The best time to supply it would no doubt be in May or June, as if put in during the winter, it might be largely leached out of the reach of the plant before the coming season. There are several reliable dealers in fertilizers in Canada; Messrs. Brodie & Harvie, of Montreal, Que., are well known, as also, Mr. W. A. Freeman, of Hamilton, Ont.

PRICE OF APPLES.

SIR,—Can you tell me how much good winter apples ought to be worth? Some buyers are only offering \$1. Can you recommend a good consignee in Great Britain?

JOHN LEONARD, *Beachville, Ont.*

It is impossible for any man to predict, without a supernatural gift, what will be the price of good winter apples. So much depends upon the supply from the various countries of the world; but, judging from the reports which we have received, we should expect to receive a good deal more than \$1 a barrel for first-class winter apples. We think our subscriber would be perfectly safe in consigning to any whose name now appears in our advertising pages.

APPLE WINE.

SIR,—How much sugar and other substances to the gallon of cider? I want to get a tasty and keeping apple wine.

JEAN GRUENBECK, *Cayuga.*

Reply by D. Nichol, Cataragui, Ont.

DEAR SIR,—In reply to subscriber's query: "How much sugar and other substances to the gallon of cider, in order to make a tasty, good keeping apple wine?" That would very much depend upon whether the cider was made from sweet or sour apples. The finest apple wine I have ever seen was made from Golden Russet apples—half pound of best white sugar to one quart of cider or

apple juice. The sugar was added to the newly extracted juice and all fermented together, the same as in the making of rhubarb wine.

If the cider was made from sweet apples, less sugar would be required ; but then there would be the want of flavor. I could not expect to make a good tasty wine from cider made from a mixture of coarse apples. Fine apple wine can only be made from fine apples. I do not know that any substance other than sugar should be added to apple juice in order to make good keeping wine.

EARLY OHIO GRAPE.

SIR,—We send you a sample of our new grape, the Early Ohio, with some of the foliage. We have been picking the fruit since August 24th, and last year we picked the vines clean by August the 17th and 18th. For the last four years we have tested it, and it has proved to be one or two weeks earlier than Moore's Early. It is nearly as hardy as the Concord, and nearly if not quite as vigorous a grower and very productive.

Sept. 3rd, 1891.

C. S. CURTICE & Co., Portland, N. Y.

This grape comes in very good shape, remarkably close-bunched, and commends itself to our notice on account of its earliness. The samples were dead ripe and in the very best condition for eating. The berry is black, below the medium in size, and thickly covered with bloom ; the pulp is soft, containing a couple of seeds, and the quality is good.

WRONGLY NAMED.

SIR,—I send you this day sample of plum for correct name. The tree was bought for McLaughlin, but I have doubt as to its being that variety.

GEORGE SMITH, *Manila, Ont.*

The plums which you sent are excellent samples of the Lombard. It is rather disappointing to buy trees for one variety and have them turn out another, especially when one's object often is to become acquainted with particular kinds. Many of our nurserymen are very careless in this respect. The writer has a tree, bought for *Duane's Purple*, but it is, this year, producing a heavy load of *Lombards*.

SEEDLING PLUM.

SIR,—I send you a sample of a seedling plum which is growing in the garden of Mr. Wootin, of Harriston. The pit was planted eleven years ago. It is a healthy looking tree and has a heavy crop of plums this year. What do you think of its quality ?

JOHN PRAIN, *Harriston, Ont.*

This is a magnificent looking plum, and were the quality in keeping with its beauty of appearance, it would certainly be desirable for propagation ; but unfortunately it is lacking in this respect.

* Open Letters. *

THE SHAFFER.

SIR,—The Shaffer raspberries which you sent with the CANADIAN HORTICULTURIST, have grown splendidly. The plants were set out in the spring, and the tips layered towards fall, twenty of them taking root. These I planted out this spring, so now have twenty-four large bushes which have given me some good-sized berries this summer. I do not think they are as good as the Cuthbert in flavor, but I never saw bushes make a better growth of wood.

ABRAHAM HALE, *Seaforth, Ont.*

USEFUL ANTS.

SIR,—Your correspondent, Mr. W. Dempsey (page 220), is, I fear, a one-eyed observer. Most likely the ants which he wishes to destroy are killing leaf pests upon his fruit trees. Ants have their own place in the economy of nature, and I have found them doing good work when the man they were helping wished me to aid him in their destruction.

R. W., *Winnipeg.*

↻ Our Markets. ↻

APPLES.—According to reports from all our markets, fall apples have a very dull sale. Fall fruit has been sold in Montreal at from \$1.25 to \$1.40 per barrel, and in New York City, fancy red winter apples, such as Kings, have sold as high as \$2.50 per barrel. The advice from most quarters is to hold back the best winter fruit and late-keeping fall apples as late as possible, until the soft and inferior fruit is cleared out of the markets. Reports from England are somewhat to the same effect, and indicate that there is a large crop of summer and fall apples in Great Britain. After these are cleared out, the prospect is that Canadian apples of a fine quality will do well. Messrs. Wood, Ormerod & Co., of Edinburgh, who advertise with us, send us a code, according to which they intend sending us cablegrams of the prices of apples in Edinburgh. They say that at present only United States' fruit is being put on their markets and making, Kings, 19s. to 24s.; Maiden's Blush, 20s. to 22s.; Baldwins, 16s. to 18s. The quality of the apples thus quoted is fair to good, very little of it prime fruit. J. C. Houghton, of Liverpool, cables, under date of September 23rd, Kings, \$4.35 to \$5.82; Baldwins, \$3.40 to \$4.83; Greenings, \$2.91 to \$4.12. Messrs. James Lindsay & Son, Glasgow, Edinburgh and Leith, cable, Kings, \$4.38 to \$5.82; Blush, \$3.90 to \$5.35; Cranberry Pippins, \$4.38 to \$5.82; Greenings, \$2.92 to \$3.85. The *Trade Bulletin*, of Montreal, says that a few contracts for apples have been made by Western men at from \$1 to \$1.23, on the tree. The New York *Fruit Trade Bulletin* is of the opinion that the shortage in apples in New York and Michigan, will be fully made up by the enormous crop in New Jersey and Pennsylvania, so that the prices will not run very high in America.

PEARS.—According to the New York *Fruit Bulletin*, the pear crop in the Eastern States is simply enormous, and, consequently, the prices ruling in the principal cities of the States has been the lowest on record, reaching as low as from \$1 to \$2 for merchantable fruit. Under these circumstances the transportation companies get nearly all the money, leaving very little for the producer. Fortunately, we have done a little better in Canada, and yet, considering that our crop has been not much over half the average, and that the quality has been extra fine, growers cannot help feeling inclined to grumble. Probably, now that early pears are over, our markets for late pears will improve.

GRAPES.—These have ripened up all at once this season, and nearly all varieties are ready for shipping. This, in addition to the fact that much green fruit has been pushed forward, is causing a temporary glut in all our markets. There is no doubt that the grape

crop in Canada and the United States is unprecedentedly large, and growers may expect very low prices. Yet with careful management in not overcrowding the markets at any time, but giving the consumers in our cities plenty of time to make use of them, we may surely expect that all may be disposed of at reasonable prices. If we can get even $1\frac{1}{4}$ cents for such heavy yielders as the Concord, we need not complain. At this price they will be bought up for wine making.

LIVERPOOL APPLE MARKET.

Arrivals to date 11,412 barrels, all from New York, with the exception of 400 barrels. During the past three weeks a considerable quantity of early fruit has arrived. The first were poor quality and condition; and as our markets were glutted with windfalls of the English crop, there was consequently very little demand, and large quantities were sold at 3s. to 7s. a barrel. The arrivals this week have mostly been early varieties, but showed a considerable improvement in quality; and with less of the home produce offering, there has been more activity, and fair prices have been realized for good sound stock. King Pippins have attracted most attention, being good size, clear, and fair color, and sold up to 25s.; a few branded Baldwins were small, immature, and unattractive.

The late storms have greatly reduced our crop, which at the time of our annual report was only a poor one; there is therefore every prospect that very shortly our market must entirely depend on America and Canada for its supplies.

Quotation for the week for sound.—New York—Baldwins, 12/6 to 16/9; Cran. Pips., 16/9 to 22/; Wagner, 16/9 to 17/9; Blush, 13/9 to 16/; Ribston Pip., 12/9 to 19/3; Ox Pip., 16/6 to 20/6; 20 oz. Pip., 12/9 to 17/9; King Pip., 17/ to 25/; Greenings, 12/ to 18/; Fall Pips., 9/ to 13/3. Boston—Ramshorns, 15/9 to 20/. Canadian—Favoritea, 18/ to 18/6; Fillbaskets, 25/.

Liverpool, 19th Sept., 1891.

Yours faithfully,

WOODALL & Co.

NEW YORK CITY.

Hot weather still prevails at the opening of the week, and the market shows but little improvement on fruits, with the exception of fancy pears. Bartletts in light supply, and selling kegs from \$1 to \$1.75; Seckles, \$1 to \$1.50; Buerre Bosc, Duchess, Sheldon, per bbl., \$1.75 to \$2.50; quinces, per bbl., \$2 to \$3; plums, prunes, 20 to 40 cts. per basket; Damsons, 25 to 75 cts. per crate; apples, Kings, Alexanders, 20 oz., \$1.75 to \$2. Green fruit in heavy supply, selling at 75 cts. to \$1.25 per bbl. Peaches, 50 cts. to \$1.25 a basket. Market on grapes continues in demoralized condition, from the fact of the rumor of poisoned grapes, and prices ruling low. Delaware, 5 lb. baskets, 14 to 18 cts.; Concorde, 10 lbs., 15 to 20 cts., crates, \$2 to \$2.50. Potatoes in heavy supply, selling at \$1.25 to \$1.50. Sweet potatoes in heavy supply, selling at \$1.25 to \$1.50. Chestnuts, \$5.50 to \$6.50 per bushel. Hickory nuts, \$2. Onions, red and yellow, \$1.25 to \$1.50. Eggs, nearly fresh, 22 cts. Spring chickens dressed, 12 to 15 cts. Fowls, 11 to 13 cts. Butter, select, dairy tubs and pails, 21 to 23 cts., prime, 18 to 20 cts. Market rules dull on beans and dried fruits, and no changes worthy of note.

Sept. 28, 1891.

G. S. PALMER.

EDINBURGH.

Cable from Messrs. Wood, Ormerod & Co., dated 1st October.

Kings, 19s. to 23s.; Maiden's Blush, 18s. to 21s.; Baldwins, 17s. to 20s. Good prospects for choice Canadian apples.

↔ Our Book Table. ↔

BOOKS.

THE ANNUAL REPORT OF THE MINNESOTA STATE HORTICULTURAL SOCIETY has just come to hand. It is printed in fine type and forms a volume of 331 pages. It is bound in cloth very neatly, and contains some matter from which we may occasionally give extracts for the benefit of our readers.

FRUITS AND FLOWERS, is the title of a monthly magazine now being published in Portland, Oregon, E. R. Lake, Vancouver, Wash. Terr., Editor. It is got up somewhat in the style of the CANADIAN HORTICULTURIST, with a colored plate as a frontispiece for each number. It is a little larger, having 48 pages instead of 32. The price is \$2 per year, or 20 cents a copy.

CATALOGUES.

HENDERSON'S AUTUMN BULBS for 1891. Peter Henderson Co., 34 Cortland St., New York.

WEBSTER BROS'. ILLUSTRATED BOOK OF BULBS AND PLANTS, for winter blooming Messrs. Webster Bros., Hamilton, Ont.

<i>The Canadian Horticulturist, 1 year,</i>	-	-	-	-	-	\$1 00
<i>The Rural New-Yorker from date to January 1, 1893,</i>	-	-	-	-	-	2 25
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