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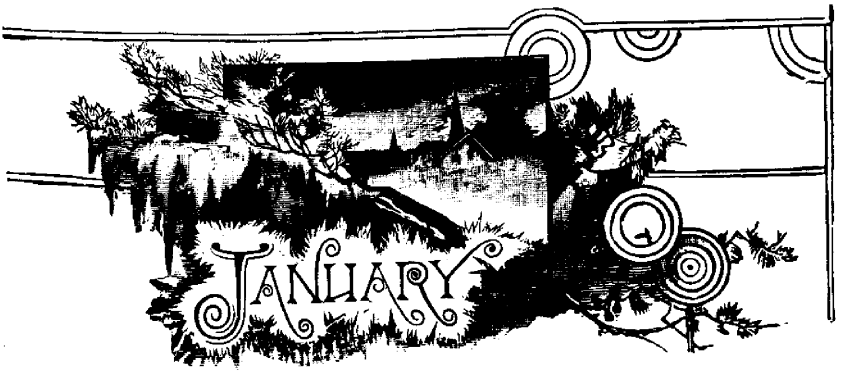
NEW DOUBLE WHITE ANEMONE.
WHIRLWIND.

THE

Canadian Horticulturist

VOL. XIX. 1896. No. 1.



ANEMONE FULGENS.

THE Anemones, or Woodflowers, form a large family of hardy and showy plants for the border. They are easily propagated from the seed, and by sowing at intervals a succession of bloom may be had for the whole season. Forty-nine cultivated varieties of this genus are described in Nicholson's Dictionary of Gardening, of which Anemone fulgens, commonly known as the Double White anemone, is one of the most showy. It is a native of Greece in Southern Europe, whence it was introduced in 1865 to England, and it is now generally sought for. The flowers are "of a dazzling vermilion, with a black central patch of stamen about two inches across." The following remarks from Wood's Hardy Perennials will be of interest in this connection :

"It may be grown in pots for conservatory or indoor decoration. Borders or the moist parts of rock work are suitable for it; but perhaps it is seen to greatest advantage in irregular masses in the half shade of trees in front of a shrubbery; and, after all, it is impossible to plant this wrong as regards effect. To grow it well, however, it must have a moist situation and good loam."

STRAWBERRIES—REPORT ON LATE VARIETIES.

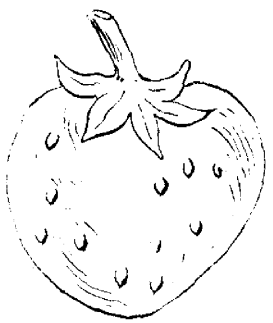


FIG. 871.—AROMA.

I. Aroma (S).—A seedling of Cumberland from Kansas, by E. W. Cruse. A good vigorous grower; no rust; season of fruit late; size of berry large; fine quality; quite firm; very good color; a good looking berry, and fairly productive; keeps its size well to the last picking; a good pollenizer for large late pistillates. It seems to do well in all soils and climates; good reports come from all quarters of the Aroma. The plant is strong and very healthy. Third year of fruiting.

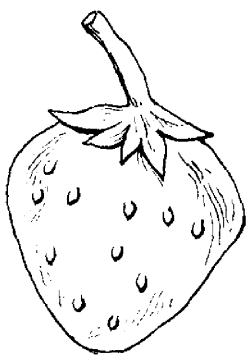


FIG. 872.—TIMBRELL.

II. Timbrell (P).—A chance seedling from New York, by H. S. Timbrell. The plant is a clean, healthy, vigorous grower. No rust whatever so far. The season of fruiting is late to very late. I picked Timbrells on July 24th, 1895; fine, beautiful berries. The size is medium to large; the quality is of the very best, and quite firm; will carry well to market, and is very productive. The only objection anyone could have against the Timbrell here is its color; it is mottled, red, pink and white, but the fine flavor of the berry makes up for the color. It is a fine berry; seems to stand the frost well. Second year of fruiting.

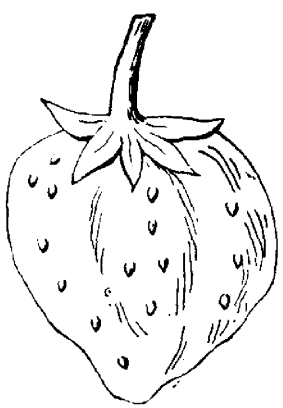


FIG. 873.—WOOLVERTON.

III. Woolverton (S).—A seedling, by Mr. Little, of Ontario. The plant is large, strong and healthy; stands the hot, dry weather with the best; the season of fruit is late; size of berry one of the largest; quality fair; color dark crimson; it is firm for so large a berry, and productive. Although the berry is among the late ones in ripening, it is one of the first to bloom; it is rich in pollen, and so one of the very best to plant with the large pistillates; the flesh is white. It is one of the best among the staminates. Fourth year of fruiting.

IV. Muskingum (S.)—A seedling grown in Ohio, by G. Kearns. The plant is a good healthy grower; the season of fruit is late; size of berry medium to large; quality is good; it is firm, and medium in productiveness; it is a very fair variety. It did not do as well this year as in 1894, the frost hurt it very much this year. Second year of fruiting.

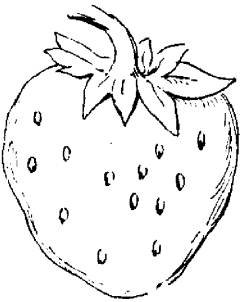


FIG. 874.—MUSKINGUM.

V. Parker Earle (S.)—A seedling from Texas, from the Crescent, crossed with Munson's No. 8, by J. Nimon. The plant makes very few runners, rusts somewhat, the plant stools out; the season is late; the size of berry is small to medium; the quality is fair and the berry is firm; it is very productive, the plant is not able to mature the great mass of fruit it sets; if it were in a deep rich, moist soil it might do so, but in the soil here it is not worth growing. I have seen the berries just dry up before coloring; then in such hot dry weather the berries are small and sour, unless under above conditions of soil. I would not advise any one to plant largely of Parker Earle. Fourth year of fruiting.

FIG. 875.—
PARKER EARLE.

VI. Equinox (S.)—A seedling of Mount Vernon, by M. T. Thompson, Va. The plant is a good strong grower, healthy; little or no rust; season of fruiting very late; size of berry medium to large; quality good; color crimson; the berry is quite firm and the plant is very productive, in fact one of the most productive I had; I expect to hear very good accounts of the Equinox in the future. First year of fruiting.

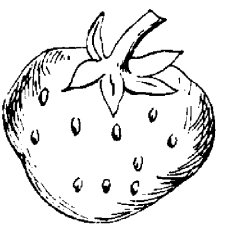


FIG. 876.—EQUINOX.

VII. Gandy (S).—A seedling of Jersey Queen and Glendale. The plant is a strong and vigorous grower, quite healthy; season of fruit is late; size of berry medium to large, quality of fruit is good; a good looking and shapely berry; color dark crimson, roundish conical, a very firm berry, but a shy bearer; this is its greatest fault; it gives one grand picking, then is done. Third year of fruiting.

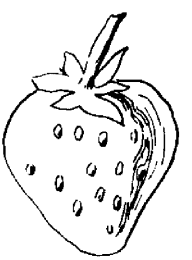


FIG. 877.—GANDY.

VIII. Jersey Queen (P).— The plant is very healthy, a fair grower, of beautiful green foliage, very often as fresh a green after fruiting as before. The season of fruit is very late; has been the standard late berry for some years. Size of fruit large to very large, of fine glossy appearance, that brings the highest price in the market. It makes a better growth of plants the second year than the first; the berry is firm and good quality, medium in productiveness. I consider it valuable, as it extends the fruiting season sometimes a week or more. Sixth year of fruiting.

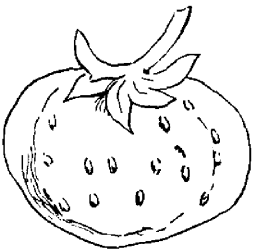


FIG. 873.—JERSEY QUEEN.

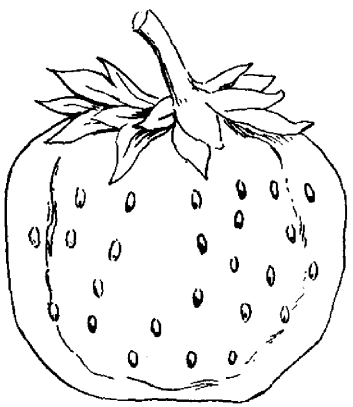


FIG. 879.—MAPLE BANK.

IX. Maple Bank (P.) — A seedling by William Stevenson, of Guelph, Ont.; thought to be a cross of Crescent and Wilson. The plant is a strong vigorous grower, making wide matted row. Season medium to late; size of berry large, quality best, very firm and productive. Third year of fruiting.

X. Belle, or Crawford's No. 51 (S).— A seedling of unknown parentage, by M. T. Thompson, of Va. The plant is a strong grower and healthy; season of fruit very late, none ripe on 4th July, when other kinds were almost over fruiting. Size of berry large, long and often irregular, some fan-shaped. Quality of fruit good and berry is firm and plant quite productive. Second year of fruiting.

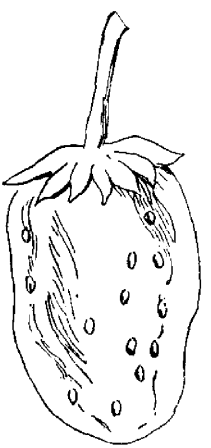


FIG. 880.—BELLE.

The above have done the best this year; but there are other varieties, that under other conditions would be quite as profitable as many of the above. This has been a very exceptional year in strawberry growing, from two causes; first, the week of hard frost in blooming time, and then the very hot and dry season when the fruit was maturing. So it would be hardly fair to take the results of this year as a criterion of what the various varieties are able to do. Some of the kinds, that in an average year are among the best, this year were caught at a most critical time in their blooming, and did not recover. Some of the kinds sent up a full second set of fruit stalks, notably among these was the Clyde. I think this is the coming variety for Ontario as a market berry.

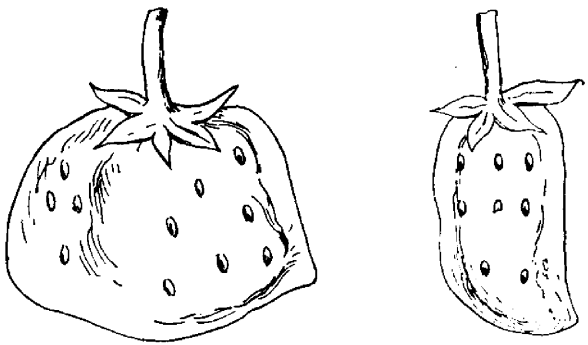


FIG. 881.—SOME SHAPES OF THE BELLE.

I have the report of thirty strawberry experts as to the five best sorts for market purposes—these were all scattered over the United States and Canada. Twenty of them name Bubach; 15 of them name Warfield; 13 name Haverland; 11 name Lovett; 10 Parker Earle; 9 Crescent; 7 Greenville; 6 Timbrell; 4 Gandy; 3 Van Deman; 3 Saunders. These seem to be the most popular sorts that have been generally disseminated; therefore, one commencing to grow for market could not go far wrong if he planted the five which received the most votes, viz.: Bubach, Warfield, Haverland, Lovett and Parker Earle.

I should place Woolverton and Saunders before Lovett; and Greenville in place of Parker Earle; and I should put Clyde among the first three; but, of course, Clyde was not grown by any of the thirty voting on the five best market sorts, as it is only offered for sale for the first time this fall, although I have fruited it for three seasons.

Some growers make little or no distinction between the kinds intended for market and those for the table. I think this distinction should be made, because it is very seldom that the finest flavored varieties will produce the most boxes or get to market in the best condition.

The variety that is best for the table, may be of poor color (*i. e.* Timbrell) and a light yielder (*i. e.* Gillespie), or poor in firmness.

The majority of those who buy in the market want size first of all, then color and freshness of look, and are not at all particular as to the flavor o quality, perhaps never testing a single berry, but buying by the eye alone ; while with some people looks go for very little, and they want quality alone. Quite a number of varieties that stand high in quality of fruit, and are the very best for the table, cannot be got to market in good shape, and so should not be marked high as a market variety, except it may be for a very near market.

It may be of benefit to those who have not grown any great number of the later varieties to give a list, pointing out the different points in which they excel, as follows :

Early Sorts.—Van Deman, Margaret, Nichol's Early, Rio, Stone's Early, Beder Wood, Clyde, Cyclone, Haverland, Crescent, Meek's Early, Dayton.

Mid Season.—Bubach, Warfield, Greenville, Leader, Saunders, Tennessee Prolific, Mary, Enhance, Bisel, Brandywine, Lovett, Williams, Longfield.

Late.—Aroma, Timbrell, Woolverton, Muskingum, Gandy, Parker Earle, Equinox, Jersey Queen, Maple Bank, Belle and others.

Quality.—Iowa Beauty, Brunette, Leader, Van Deman, Banquet, Timbrell, Jessie, Gillespie, Auburn, Saunders.

Size, Large.—Aroma, Bubach, Brandywine, Belle, Briggs, Clyde, Dew, Enhance, Greenville, Saunders, Maple Bank, Haverland, Edith (largest), Gandy, Wm. Belt, Mary, Howard's No. 41, Jucunda Improved, Woolverton, Jessie, Jersey Queen, Muskingum, Marshall, No Name, Ohio Centennial, Van Deman, Timbrell, Eureka, Hunt's No. 3.

Market Sorts.—Clyde, Saunders, Bubach, Haverland, Greenville, Van Deman, Warfield, Aroma, Brandywine, Longfield, Cyclone, Robinson, Tennessee Prolific, Lovett, Mary, Beder Wood, Enhance, Williams.

There are other varieties that have good qualities worthy of trial, some that have not been fully tested as yet and so are not placed in the lists of the varieties that, after full trial, have secured recognition over a wide extent.

Below is a list of kinds having many good points, some of them not fully tested :

Phillips, Beverley, Magnate, Barton's Eclipse, Afton, Gertrude, Howard's No. 25, Hiawatha, Jurabolo, Kansas Prolific, Princess, Smith's, Sunnyside, Scarlet Ball, Springdale, Huntsman, Splendid, Thompson's No. 40, Gandy, Bell, Vera, Plow City, Beauty, Richmond, Hutch Ex. Station 24, Effie May, Charlie, Ivanhoe, Epping, Judsonia, Oberholtzer, America, Snowball.

The following are of little merit, and I have decided they are not worth growing :

Anna Forrest, Auburn, Dayton, Dew, Edwards' Favorite, Eureka, Farnsworth, Gillespie, Accomac, Bessie, Stevens, Westbrook, Alabama, Clark's E., Middlefield, Mrs. Cleveland, Prize, Martha, Crimson Cluster, Beebe, Parker Earle, Price, Lady Rusk, Swindle, Regina, E. P. Roe, Idaho, Pawnee, Stand-

ard, Belle of Lacrosse, Primate, Gen. Putnam, Alpine, Hull's No. 6, Hull's No. 8, Jessie, Kossuth, Stone's No. 7, and No. 16, also No. 15, Shuster's Gem.

I have the following new varieties to fruit in 1896 for the first time :

	Sex.		Sex.		Sex.
Apache	S.	Gardner	S.	Reihl's No. 5	P.
Aug. Nicaise	S.	Glen Mary	P.	Shawnee	S.P.
Allen		Giant	S.	Sharpless Improved	S.
Allen's No. 6	P.	Hersey	S.	Sunrise	P.
Allen's No. 13	P.	Homestead		Triumph de Gand	S.
Avery's Seeding	P.	Hull's No. 3	S.	Tubbs	
Black Prince	S.	H. W. Beecher	S.	Thompson's 40	P.
Berlin	P.	Howard's 501	S.	Thompson's 104	
British Queen	S.	Howard's 23	P.	Victor Hugo	S.
Beede's No. 2		Holland	P.	West Lawn	P.
Banquet	S.	Knicks	S.	Weston	P.
Brunette	S.	Laxton's No 1	S.	Yahoo	S.
Bouncer	S.	Lady Thompson	S.	Zula	S.
Cardinal	S.	Leviathan	S.	Huntsman	S.P.
Columbia	S.	Lady Franklin	P.	Buster	S.
Champion of England	S.	Lord Sheffield	S.	Onward	S.
Carrie	P.	Murray	S.	Dora	P.
Eleanor	S.	Paris King	S.	Sargeant	S.
Enormous	P.	Pet	S.	Howard's No. 6	P.
Erie	S.	Pine Hill No. 20	P.	Hunn	P.
Fountain	S.	Raser	S.		
Gunton Park	S.	Reihl's No. 6	S.		

My report would be incomplete without mentioning the seedlings in the trial plots ; one plot is Howard's No. 41 crossed with Marshall and Brandywine ; another plot is Timbrell crossed with Brandywine and Marshall ; another plot is Marshall Seedlings ; I have another plot, Howard's No. 25 and other seedlings—both these seedlings are from Haverland crossed with Belmont ; amongst the above seedlings are some very fine strong healthy plants giving promise for the future. Very vigorous ; the size of the fruit is often indicated by the size of the leaf, if this holds good I shall have some large ones among them. Hoping that we may have a more favorable season for strawberries in 1896, I will close.

E. B. STEVENSON.

Freeman, Ont. *Exp. in Strawberries for Ontario.*

Montreal Fameuse in England.—Fameuse apples have done extraordinarily well this season in the English market, bringing as much money as Kings in some instances ; but owing to the comparatively small crop of choice fruit in the orchards around Montreal this year, no large quantities were available for shipment. Still, what went forward did remarkably well. Some sales of Fameuse in Liverpool netted the shippers here $3 75 per bbl. and over. The Montreal Fameuse has a very delicate flavor, and is much appreciated wherever introduced.—Trade Bulletin.

BLACKBERRIES.

OIL.—A deep, mellow, clay loam which contains considerable humus and crumbles rather than bakes in the furrow, is the best for the blackberry. Open, gravelly lands are too dry, and since the plants need much water it is important to plow all hard lands deep so that the roots can reach permanent moisture. On flat lands with a high subsoil, unless tile-drained, the bushes will suffer in winter and the fruit will be injured by summer droughts. Strong yearling plants from suckers or root-cuttings are best to begin with and should be planted in the spring.

Planting.—The plants are set in the furrow six or seven inches deep, two to three feet apart in the rows, which are eight feet apart. This gives space enough for two horses and a spring-tooth cultivator, which is the best means of keeping the plantation in good condition. Potatoes may be grown between the rows the first year, and it is possible by high cultivation to obtain two crops of strawberries before the blackberries smother them. Three or four canes should be allowed to grow the first year, and they will bear some fruit the following season. They should be headed back when they reach the height of two or three feet.

Training.—The canes springing from the root one year bear fruit the next, and then their usefulness is ended. These canes can be cut in August or September, or the operation can be delayed to a less busy season, but they should always be cut off before the following spring close to the ground, so that other canes will sprout from the root to take their places. A strong root may send up from ten to twenty shoots, but only a few of them should be allowed to remain, the number being determined by the vigor of the plant, the closeness of planting, etc. Five or six canes will usually suffice, and if the very best fruit is desired this number may be reduced. The strongest canes should be left, the others pulled out when they are four or five inches high, and the superfluous shoots should be removed several times during the season. When the growing canes are two and a half or three feet high a couple of inches of their tips are cut off, and the plantation should be gone over three or four times as the different canes reach the desired height. The vigorous laterals should be allowed to push out and grow their full length and should not be shortened in until the next spring. How much they should be cut depends on various circumstances. Some, like Wilson's Early, bear fruit close to the cane; others should be left longer. Some growers delay the pruning until the blossoms appear, and the laterals are left from twelve to twenty inches in length. As these bear most of the fruit it is important that they make strong, well-matured growth and that the grower shall familiarize himself with their habits. It is important, generally, that the main cane should be headed in early so that

the laterals should have time to make a hard growth and start down low so as to prevent the cane from tipping over with its load of fruit. Plants thus managed will need no stakes or trellises, although a simple wire may be stretched along each side of the row and secured to stakes to keep them from lopping. Along the Hudson River plants are trained after the manner of grapes on two-wire trellises. The young canes are headed just above the upper wire and are tied to it where they will least interfere with the ripening fruit. The canes may remain on the wires all winter, or they may be lain down for protection and tied securely to both wires the following spring. This necessitates one summer tying for the young canes and one spring tying for the bearing canes. It is not the best practice to tie them to a single stake, as the fruit will be too much massed in the foliage, although dewberries can be profitably handled this way.

Winter Protection—Hardy varieties, judiciously grown and pruned, do not need this in Western New York. In colder climates the bushes are tipped over and covered late in the fall. One man goes ahead with a round-pointed shovel and digs the earth six inches deep from the roots, a second man places a fork against the plant a foot or so above the ground, and by pushing it and stamping against the roots with his feet lays it over, the third man covers the plant with the earth that has been removed or marsh hay. If the variety is a tender one the whole bush is covered two or three inches deep. Hardy varieties only need a few shovelfuls of earth on the tops of the canes. If frosts are feared they may be left under this covering until corn-planting time, but the bushes must be watched in spring and raised before the buds become soft and white. This method of laying down the plants costs less than ten dollars an acre, and the slight breaking of roots is no disadvantage. The operators must be careful not to crack or split the canes, and the method should be varied, as the canes of some varieties are stiffer than others.

Cultivation—Surface tillage should be begun early in the spring to preserve the water. If plowed early, a spring-toothed cultivator should be run through the plants every week, especially after rain, before the soil bakes. After the crop is harvested one cultivation is given to loosen up the ground which has been tramped down by the pickers, say, about the middle or last of August. Frequently light cultivations are the cheapest, because the weeds never get a chance to grow, and little hoeing is necessary. If a patch becomes foul with thistles or other weeds it is best to mow it over, plow it up thoroughly and crop with corn for a season. Suckers will come up among the corn along the old rows, and the next year the plantation will be completely renewed. Stable manure is the popular fertilizer, although, if the tillage is good, nitrogen will scarcely be needed, so that potash and phosphoric acid can be applied alone.

Yield: and Profits.—The year after the planting the yield should pay the cost up to that time, the third year should give a large crop, and since there seems to be no limit of the profitable age of a blackberry plantation, every good year should give a good crop thereafter. Of course, a plantation will not endure

when the land becomes hard and foul, or the plants full of dead and diseased wood. A crop of two hundred bushels an acre year after year is possible, unless very unfavorable seasons intervene. With good varieties well cared for, the blackberry is one of the most profitable of small fruits, but the golden harvest only comes to those who work for it, and think while they work.

Accidents and Diseases.—Frosts occasionally injures the crop in Western New York, when a severe one comes late. The four most dangerous diseases are the red rust, the root gall, anthracnose and cane knot. The first is incurable, and the affected bush should be pulled out and burned as soon as discovered. The same is true of the root gall. The anthracnose is less serious, and can be kept in check by spraying with Bordeaux mixture, but the best treatment is to cut out and burn the old canes as soon as the fruit is off, and examine the bushes frequently for the disease, and cut out the diseased shoots. If the patch is seriously affected it is best to mow the bushes off close to the ground in the fall and early spring, clean out the crowns, spray them and start a wholly new top. The treatment of the cane knot is deferred to another bulletin.

Blackberries deserve attention as the last of the small fruits and the luscious desert of midsummer. They are only luscious, however, when left on the bush until fully ripe and eaten soon after they are picked. The blackberry is not ripe because it is black; it must be soft and drop into the hand when the cluster is shaken, to get its full sweetness and aroma. But, since the fruit deteriorates soon after picking, blackberries never get to market in their best condition, and those who want exceptionally fine fruit must raise it in their home garden.—From Bulletin 99, Cornell Univ.

BEURRE GIFFARD.

At Maplehurst we top-grafted some old trees with this variety, and we are much pleased with the result. The wood has grown vigorously and soon made a fine top; the yield is quite large, and the fruit large and handsome. Most of the early August pears we grew are rather small, as for example, Doyenne d'Ete, Rostiezer, and Orband's Summer; but the Giffard is of good size and takes on a handsome yellow color, with red cheek. The pear ripens about the middle of August and will not keep long after maturity.

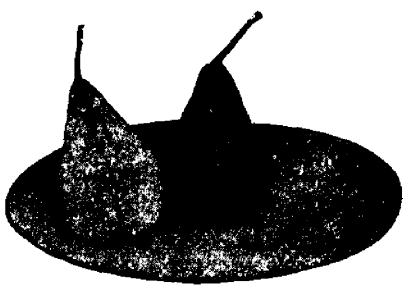


FIG. 882.—BEURRE GIFFARD.

PEACHES—BEST VARIETIES.

IN Cornell University Bulletin No. 74, seventeen leading peach growers of Western New York, give lists of peaches for market. These lists vary from two varieties to fourteen varieties. Forty-three varieties in all are recommended, and the effect is rather confusing. To rectify this difficulty as far as is possible I have summarized the lists with the following results :

	TIMES.
Early Crawford is mentioned	14
Late Crawford	13
Salway	7
Mountain Rose	6
Foster	6
Brigdon or Garfield	6
Elberta	6
Old Mixon Free	5
Wheatland	5
Steven's Rareripe	5
Early Rivers	5
Wager	4
Yellow St. John'	4
Hill's	4
Smock	4
Alexander	3
Hynes' Surprise	3
Red Cheek Melocoton	2
Early Rivers	2
Stump	2
Reeve's Favorite	2
Globe	2

Horton's Rivers, Millet, Atlanta, Peter Lamont, Crosby, Longhurst, Early York, Early Michigan, Hale's Early, Michigan Chili, Barnard, Yellow Alberge, Honest John, Morris' White, Ward's Late White, Chair's Choice, Beer's Smock, Gary's Holden and Billyer's Late, receive honorable mention only once. The ascendency of the Crawfords is significant, although they lack productiveness. Many good and productive peaches are not much grown because buyers demand yellow fleshed varieties.

Consumers in some places are learning that cheese is no better when colored yellow by annata. Those who grow peaches for home use can avail themselves of the productive and delicious white varieties. It will be seen that very early clingstone varieties, like Alexander, are rapidly sinking in public estimation.

Elberta is mentioned six times, largely because of faith in its merits as advertised. Globe is mentioned once, which is often enough. It is a very large late yellow, unproductive peach, that rots almost as fast as it ripens.

Niagara Falls South. E. MORDEN.

FARM ICE HOUSES AND COLD STORAGE.

TWO classes of farm ice houses are practicable. If high dry ground or a hillside is available, a pit or submerged house can be constructed. Make a hole in the ground of the desired size, the bottom highest in the middle, so that the water from melting will drain toward the walls. At each side place a line of tile leading from the house to the side of the hill, or to another drain or ditch. Drainage must be perfect, or results will not be satisfactory. For walls, put in a frame made much like that of an ordinary corncrib, with the boards close together and on the inside of the uprights. The joists should be 2 x 6 pine or hardwood, depending upon which is the cheapest. Stone may also be used. The roof is best if 2 x 6 studding is used, boarded on both sides; but any kind of a roof will serve, especially if covered with hay, straw or stalks to keep out the heat. If the pit is in a shady place—which is always desirable—the gables may be left open for ventilation. If sun strikes the roof, ordinary ventilators must be provided. Drainage must be perfect and the ventilation adequate, but it is best to have as little circulation of air as possible. A door must be made for taking

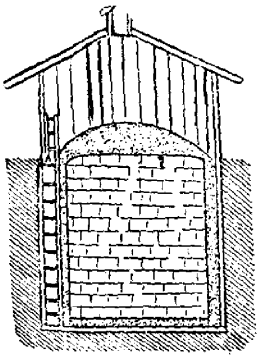


FIG. 883.—PIT ICE HOUSE.

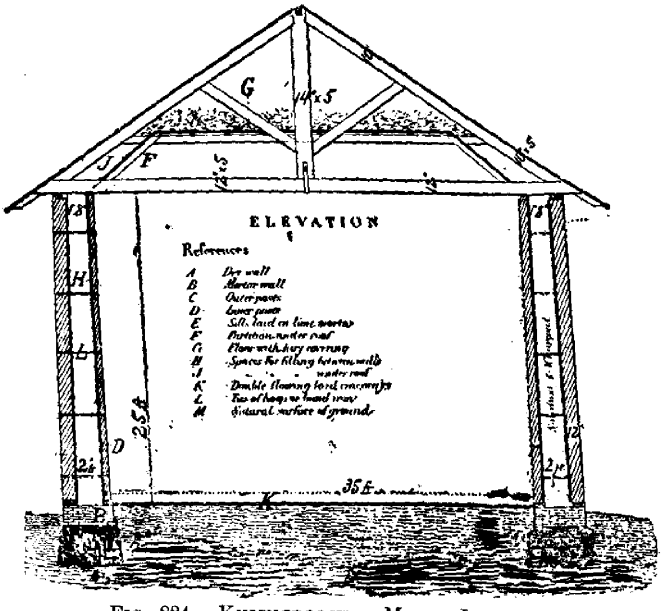


FIG. 884.—KNICKERBOCKER MODEL ICE HOUSE.

out ice, and as the supply is lowered a ladder becomes necessary. Fig. 883 shows such a pit.

If water stands near the surface of the ground, admitting of a possibility of its rising in the pit, the safest way is to build the house entirely above ground, taking the precautions outlined above as to location, drainage and ventilation. A floor is not absolutely necessary, although desirable. A cheap shed with rough posts, carefully double boarded and the air space filled with sawdust or chaff, will be better than nothing, and if a straw stack or heap of corn stalks

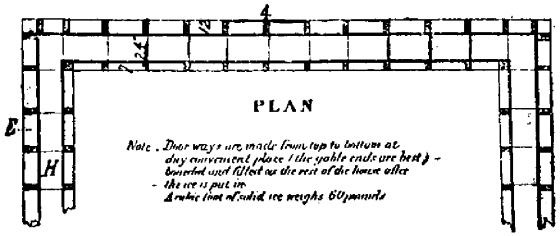


FIG. 885.—SECTIONAL PLAN OF MODEL ICE HOUSE.

could be built over it, such an affair would keep ice fairly well. But thrifty farmers believe in building a durable ice house that will last. The common type is shown in Fig 886. A six-inch dead-air space is not sufficient, even if the outer boards are matched and the inner square-edged, with tarred paper underneath both. Some think the paper is hardly necessary under the inside boards if they are matched, but square-edged boards may be used on both sides with paper on both sides of studding. Fig. 884 shows a plan submitted by the Knickerbocker Ice Co. of New York (one of the largest and most experienced firms in the ice trade), which they say embodies "all of the essential particulars necessary for a perfect ice house, unless it be deemed desirable to put in a ventilator to carry off the heated air radiating from the roof in midday." This would be much improved by having the inner wall slant inward (Fig. 887), the drippings from the ice thus falling away from the sides and not rotting the boards.

Ice men are also using a double air space, the inner one filled with sawdust, the outer not filled, and four or six inches studding used for it. The idea is that this outer wall still further excludes heat from the inner filled space. In such cases an eight or ten-inch board is left off at top and bottom of the house inside to permit a circulation of air. This idea is carried still further in the Gerrish plan where there is a six-inch wall outside with no filling, then a 24-inch space filled with planer shavings or hay, then an eight-inch dead-air space. This makes a veritable refrigerator, and while more expensive than the ordinary farmer

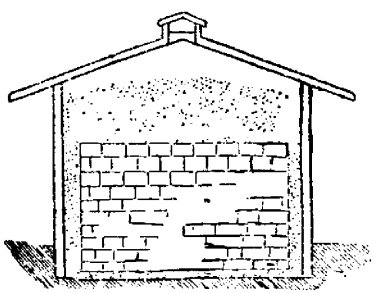


FIG. 886.—COMMON ICE HOUSE.

need use, it is advised for country cold storage warehouses, etc., especially when a little ice has to go a good way. Filling for the dead-air space in ice-house walls is not needed, the air space being the best non-conductor of heat, or insulator, is the view held by some, but practical icemen of longest and largest experience insist on filling, even if the space is air-tight. Perfectly dry sawdust is usually preferred for filling, but it must be dry, as moisture renders it a good conductor, and the moist surface will readily convey the heat to the ice. Fine planer shavings, that do not pack quite as closely as sawdust, are also used, and spent tan bark where it can be had dry for the hauling; fine chaff is better than nothing. Pounded charcoal is best of all when it can be had cheap enough, "and as it is antiseptic it does not decay the wood with which it comes in contact, as does sawdust. Indeed, charcoal is perhaps the only thing that could reasonably answer for a single partition of but six or eight inches thickness." For cold storage, place the ice room above the storage room, with apertures for the cold air to pass down through. This melt from the ice may be utilized for washing butter, cooling milk, or other purposes for which ice water is needed. All these purposes can be subserved in one building by a little planning.—Amer. Agriculturist.

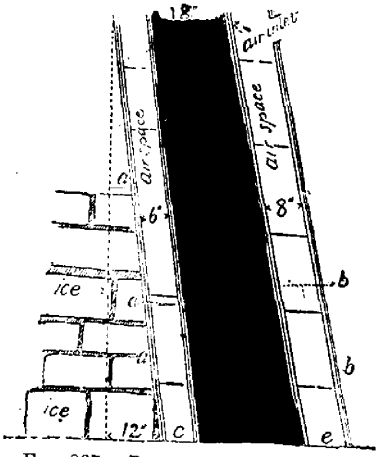


FIG. 887.—REFRIGERATOR HOUSE.

a Matched boards both sides inner air space, with tarred paper underneath; *b*, ditto, outer air space. Intervening black space filled with shavings, hay or sawdust.

Unloading Barrels from Wagons.—Farmers frequently have cider, vinegar, molasses, and other bulky matter in hogsheads and barrels which have to be removed from a wagon. The skids in so common use by storekeepers are invaluable where much heavy trucking occurs. For construction take two pieces of ash or other strong wood 2 x 3 inches and seven to nine feet long. With iron bolts fasten about one foot apart. The iron bolt should be from one-half to one inch in diameter and bent crescent from between the side pieces of wood. Plane one end of each stick to an acute angle running back about 10 inches. Put a piece of plate iron on each stick, fasten with bolts tightly clinched, and turn the end over so as to catch on the platform of the wagon. The ends resting on the ground should likewise be planed and covered with iron bands. For removing casks, stand the barrel on end and tip over the skids, and it will slide down to the ground with but little effort on the part of the driver.—A. C. LAKE, American Agriculturist.

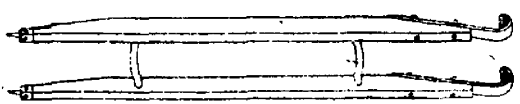


FIG. 888.—SKIDS FOR SLIDING LOADS FROM WAGONS.

RASPBERRY CULTURE.

VERY farmer living within ten or twelve miles of a town of 1,000 or more people can well afford the time and ground required to produce raspberries. The soil should be well pulverized, and the plants placed six feet apart each way, or if the land is scarce they may be planted as near as 3 x 6 feet. When planted close the cultivation is more expensive, for after the canes are grown it is more difficult to get among them. Having placed a plant, cover it an inch or more in the ground, and firm the earth thoroughly around it. During the first year the plants should be hoed and cultivated often enough to keep down all weeds, and make the field as clean as if corn were planted.

The second year, the crop if it sell well should pay all expenses connected with it. The cultivation should continue the second year until the fruit begins to set, when it should cease. Late cultivation not only injures the fruit, but is likely to induce growth that will winter-kill in the cold weather.

A common method of pruning the black raspberry is to go through the bushes as the plants approach the desirable height, and with a sharp knife cut off the top of each sprout. This prevents long arching branches, and causes the plants to send out laterals on every side which balance the main stem. These laterals will be found to fruit largely during the next season.

In the fall with a one-horse plough throw a couple of furrows towards the plants to keep them from heaving out with the frost in the following spring. In the early spring these furrows should be levelled back again. For early fruiting the Souhegan is by many considered the best, and should be set on a hillside facing the south. For late bearing the Gregg is an excellent variety, and may be planted on a northern slope.

During the first season vegetables may be planted between the rows. This will force cultivation to about the amount desired for the good of the raspberry canes.

Tiverton, Ont. A. H. CAMERON.

Oak Trees of Beautiful Foliage.—In late autumn, sometimes weeks after many other beautiful leaved trees have lost their foliage, the scarlet oak *(Quercus coccinea)* presents a superb appearance. It can be identified by its retaining its foliage long after other oaks, hickories, chestnuts, sour gum and tulip trees have lost theirs, and singularly too, it at times does not take on its scarlet attire until other trees are bereft of foliage. It is the best of all for autumn color. The red oak is pretty, so is the pin, the white, the laurel-leaved, the post and the Spanish oaks. The red oak takes on a reddish color, the pin oak mingles considerable scarlet with its green, so does the laurel-leaved oak *(imbricaria)*, the post oak *(obtusiloba)*, and the Spanish *(falcata)* oak. A pretty purplish shade spreads over the green of the white oak.—Gardening.

THE LADIES' SECRETARY.

WRITING materials must be collected from their various hiding places about the house, and when at last the busy mother sits down at the table with pen, ink, blotter, paper, envelopes and stamps about her, she is pretty sure to find that the children have been trying her pen and spoiled it, or that the ink has grown thick and dry. Then somebody joggles the table, and she makes a great blot on the very first page; she forgets what she wanted to say, and by the time the letter is finished and the envelope stamped and addressed, the discouraged woman hopes she may never have to write another letter.

Now in this age of the world, it ought to be as easy for any woman to write a letter as to make a bed. But, in order to do this, she needs convenient arrangements for writing; not a portfolio or little desk which she must hold on her lap and bend over till her back aches, but an *escritoire* of good size and just the right height.

All the large furniture dealers keep on hand a variety of beautiful *escritoires*, or will make to order just such a one as any particular person may fancy; so that with a full pocket-book, there is no difficulty in suiting one's self exactly. But the impression seems to prevail that such an article of furniture is beyond the range of possibilities for poor people, or those who have very little money to spend. So they put up with all sorts of inconveniences, not knowing that a pretty and convenient secretary may be had for a few dollars, while a home-made one, equally serviceable, need not cost much more than the labor of construction. We urge every one of our readers to claim for herself the privilege of owning one of these useful articles which she will soon consider indispensable. For the benefit of those who must study economy, we give an illustration of a desk which may be easily made.—Orchard and Garden.

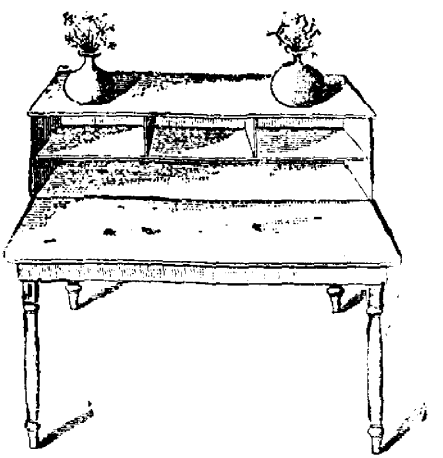


FIG. 889.

"You will fall in love," they said. In affright
I fled from each chasm to peaks above.
And when I attained the Heavenmost height
I found they were wrong—I had climbed to love!

—MARJORIE SCOTT, in January Ladies' Home Journal.

THE FARM ICE HARVEST.

The tools absolutely necessary where only a limited amount of ice is put up consist simply of an ice saw, tongs, hook, chisel, and a wagon, or sled. The saw does not cost much, and the tongs, hook and chisel can be made by a local blacksmith at a very small expense, and will last almost a lifetime. An ice plow is very desirable, but unless considerable is to be put up is not essential, as a large saw will answer the purpose. Devices for cleaning snow from the ice field can be easily made should they be needed. In filling the ice-house, first put in 18 or 24 inches of sawdust, then set the first layer of ice cakes on edge, allowing 12 or 18 inches of sawdust at the sides. The other layers may be laid flat, breaking joints; if practicable, pour in water to fill up the interstices, and make a solid block of the whole mass that will keep out air. When the house is filled, cover the ice with two feet or more of sawdust.

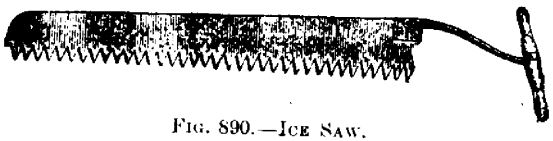


FIG. 890.—ICE SAW.

FIG. 891.—TONGS.

FIG. 892.—ICE HOOK.

FIG. 893.—ICE CHISEL.

The Apple as Medicine.—The apple is such a common fruit that very few persons are familiar with its remarkably efficacious medicinal properties. Everybody ought to know that the very best thing they can do is to eat apples just before retiring for the night. Persons uninitiated in the mysteries of the fruit are liable to throw up their hands in horror at the vision of dyspepsia which such a suggestion may summon up; but no harm can come to even a delicate system by the eating of ripe and juicy apples just before going to bed. The apple is an excellent brain food, because it has more phosphoric acid in easily digested shape than other fruits. It excites the action of the liver, promotes sound and healthy sleep, and thoroughly disinfects the mouth. This is not all. The apple helps the kidney secretions and prevents calculus growths, while it it obviates indigestion and is one of the best preservatives known of diseases of the throat. Everybody should be familiar with such knowledge.—DR. SEARLES, in Bulletin of Pharmacy.

The Garden and Lawn.

PRIVATE CONSERVATORIES.*

I HAVE had the above subject assigned to me for a short paper. In opening this question for discussion to-night, I feel myself utterly incompetent to deal with the subject, having no knowledge or experience apart from the little I have obtained in connection with my own home life, therefore I shall only speak of it from the standpoint of growing and producing flowers, shrubs and foliage plants for private use.

Most modern houses to-day, especially in our towns and cities, are lighted by gas, and when this is the case it is almost impossible to succeed in the cultivation of flowers, as the gas is a deadly element to all plant life. The only means to overcome this difficulty is to erect conservatories or greenhouses adjoining the house, but so separated as to exclude all the blighting effects of gas.

In designing a conservatory, light, heat, air and water have to be considered. The simplest form of constructing a conservatory is a lean-to, so built as to face the south if possible. This can be made ornamental if so desired, by means of architectural embellishments.

Heating is a very important item. The best and most approved method is hot water. There are numerous styles of hot water boilers, but they are all built upon the same principle, each inventor striving to expose the greatest possible heating surface to the action of the fire.

It is preferable to heat the conservatory independently of the house, as during very severe weather it is necessary to force the fire in order to maintain a proper degree of heat, which in many instances would give too much heat in the house.

Ventilation is accomplished in various ways. In small houses by lifting or sliding the sashes placed in the roof for that purpose. Shading is required as spring approaches, when the rays of the sun increase in power and light. This can be accomplished by washing the glass with lime-wash, or with whiting and milk, but, if you prefer, you can use a screen of muslin or thin cotton.

A conservatory covering some 550 feet of surface measurement and some 5000 cubic feet of air space, can be sufficiently heated in all kinds of

* A paper read before the F. G. A. at Woodstock.

weather, with a hot water boiler costing from $50 to $75, and will consume from five to six tons of coal a season; so that with an outlay of $250 or $300, apart from the running expenses, anyone may have a conservatory, together with all the enjoyment and pleasure of being surrounded during the dreary months of winter with beautiful flowers and green foliage. To love and cultivate flowers is one of the few pleasures that improve alike the mind and heart, and make every true lover of these beautiful creations of Infinite love wiser, purer and nobler. It is a pleasure that brings no pain, a sweet without a snare. If we would develop and increase the appreciation of the beautiful and our ability to enjoy the marvellous beauty which is everywhere around us, we must have the educating and refining influence of plants and flowers in the home. Our homes must be made attractive, so that lasting influence for good may be thrown around those entrusted to our care. The Creator doubtless could have made a world without a flower, but He in His wisdom did not do so; and after creating man in His own image, He placed him in a beautiful garden, in which was every plant that was pleasant to the sight or good for food. When man became a law breaker he was expelled from this garden and had to work for food among the thorns and thistles. In all parts of the civilized world to-day, the refinement, innocence and happiness of the people may be measured by the flowers they cultivate.

The conservatory places within our reach at all times, plants and flowers for the decoration of our parlors and dining-rooms. There is nothing to my mind that lends so much charm and beauty to any home, as a tasteful disposition of plants and flowers. The amount of genuine satisfaction, rest and pleasure that a business man receives and enjoys in spending a few minutes in the conservatory each and every day, more than repays him for the additional expense incurred in maintaining the same. I am convinced that many who could afford the expense of a conservatory, if they would only try the experiment, would be loud in their praises of the pleasure and satisfaction derived therefrom.

The necessary materials used in building a conservatory can be purchased already manufactured to shape, so that any ordinary carpenter can easily construct and complete the work. The putting in position of the hot-water pipes is only the work of a few hours, by some competent steam or pipe fitter. With the conservatory thus completed, you are in a position to cultivate successfully, plants and flowers, native and otherwise.

Now, Gentlemen, I have trespassed long enough upon your valuable time, and only have to regret that some one else, more competent, should have been selected to have placed this matter more intelligently before you.

Woodstock, Ont. D. W. KARN.

AN AMATEUR'S GREENHOUSE.

AFTER reading Mr. Karn's excellent paper on the Amateur Greenhouse, our readers will read with interest the following description of a very inexpensive one, taken from Gardening, one of our valuable exchanges, published at Chicago: My greenhouse (if such it may be called), cost me but sixty-five dollars complete, including the Domestic Water Heater, piping, etc. As the illustration will show it is a lean-to, built at the side of my house with an eastern exposure, it is 12 feet 6 inches long by 6 feet four inches wide. It is built on posts set in the ground, four feet apart, along the outer edge; the posts are covered on the outside with rough boards, over which is paper, and again weather boards, or matched siding, which thoroughly excludes the cold and makes a nice finish; upon this rests the framework and glass sides. The top or roof is made of sash, which can be raised or removed entirely at pleasure. Along the top, next to the house, is a row of ventilators on hinges which are raised or lowered from the inside. The entrance is from the cellarway, as the ground was excavated to the cellar floor level, to permit of head room and allow the roof to come under the dining room window. The bench on which the plants, or rather the pots rest, is four by twelve feet, and it also extends across one end.

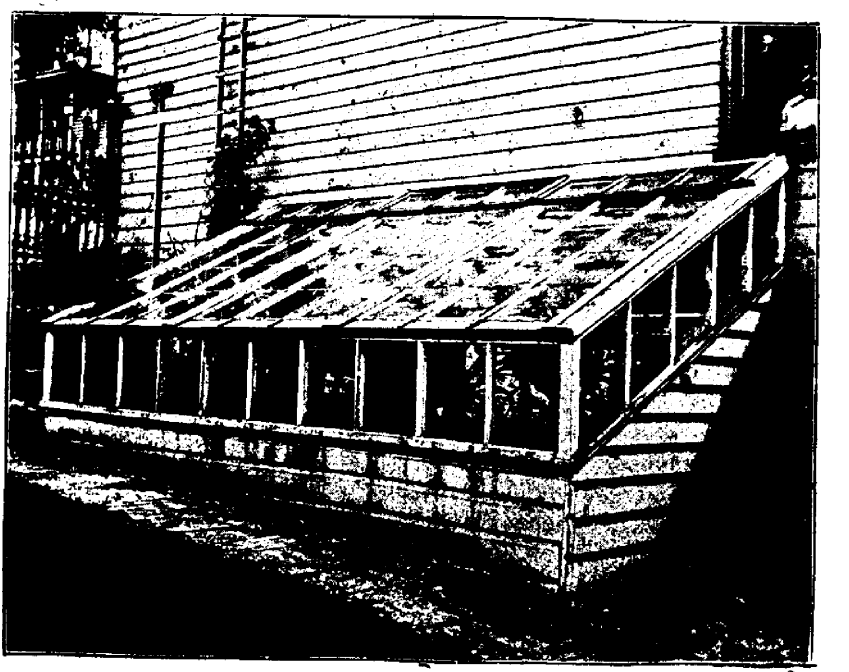


FIG. 893.—AN AMATEUR'S GREENHOUSE.

When I first built the greenhouse I was at a loss to know how to heat so so small a space, as I did not like the idea of using an oil stove, which is so often recommended. I therefore utilized a small coal stove, placed the same in the cellar, and made a coil of 1-inch wrought iron pipe, for the inside of the stove, then ran 75 feet of 1½ inch pipe through the cellar wall, and under the bench, up to a small expansion tank in the corner, as shown in the cross section, making a complete hot water system, the same as is used in the kitchen for domestic purposes. The stove part was not very satisfactory; when the fire would leave the pipes the water would not heat properly to maintain the temperature during the night. The second year I looked around for something better to heat with, and found it in Hitching & Co.'s Domestic Water Heater, a small inexpensive affair which did the work to perfection with little or no trouble, and which I could leave for ten or twelve hours without attention, and feel satisfied the temperature would not fall below 60°. I have since sold the heater, and am now using one of the same firm's base-burning heaters, No. 23; in addition to heating my greenhouse I heat two rooms in my dwelling. I mention the fact as it reduces the cost of heating the greenhouse to a very nominal figure.

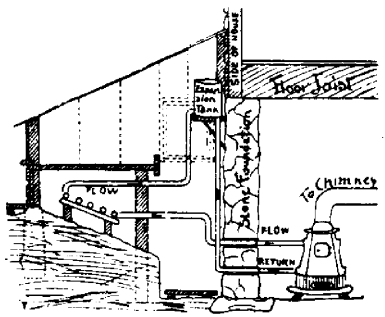


FIG. 894.—SECTION OF GREENHOUSE.

The friend to whom I sold the Domestic Water Heater uses it to heat a greenhouse (exposed on all sides) ten by fifteen feet, in a very satisfactory manner. He uses it under one end of the bench, which is bricked off, about four feet square, covers the brick work with iron, on which he puts sand and uses same as a propagating bench, the door of the fireplace opens outside, and he finds it works splendidly, with no dust or gas in the house.

I would add that the 1½ inch pipe I used under the bench was second-hand material, purchased at scrap iron prices.

The question naturally arises, what can a person grow in so small a place? I will tell you. With the aid of the cellar, which I use as a sort of cold storage place, I am enabled to bring into bloom a fine display of flowering bulbs, or some specimen plants, and there is scarcely a day during the winter when one of the windows in my dwelling is without a plant or plants in bloom. It may be quite a pretentious display of hyacinths, narcissus, jonquils or freezias, or it may be a single plant of epiphyllum truncatum, azalea, rhododendron, or an amaryllis of some choice variety. In addition to these I grow a few plants of heliotrope, ageratum, sweet alyssum and other soft wooded plants, from which my dining table is frequently supplied with cut flowers. From the blooming of the Roman hyacinths and narcissus, just before the Christmas holidays, until late in the spring, I am never without some blooming plant or bulb from my small and inexpensive greenhouse.

LILY OF THE VALLEY.

WHILE we see hyacinths, crocuses, daffodils, and all kinds of narcissi blooming in our friends' windows in winter, we seldom see lilies of the valley. Writers in floral magazines almost always insist that they cannot be made to blossom in an ordinary window, saying that even florists find it hard to succeed with them. My experience has been somewhat different, and so far I never had a complete failure with them. Sometimes, to be sure, they do better than at others, but I can usually trace it to some fault of my own.

When I take pips from my own garden I do not have as good success usually as when I procure them from a florist quite late in the season. I have had them as late as January and they blossomed all right.

FIG. 895.

I plant the pips closely in a large pot or box with the head of the pip a trifle above the soil. Then I put a layer of sphagnum over the soil, water them well and set them away in a dark place where they will freeze a little. After a while I bring them out into a warm atmosphere but do not give them the full heat of a sunny window for several days. Gradually they are

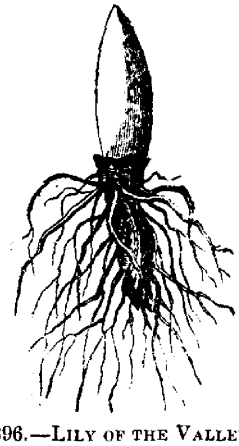


FIG. 896.—LILY OF THE VALLEY PIP.

brought to it, and soon the buds appear. The moss is left on and is always kept moist, as a florist once told me that if the heads of the pips ever becomes dry all hope of blossoms is gone. Nothing can be sweeter than the dainty little white bells, and as they are general favorites it is a pity they are not more generally seen in our windows in winter.—Vicks' Magazine.

HYACINTHS.

OR pot culture the bulbs do best when given a compost consisting of two-thirds turfy loam, one third well decayed manure of leaf mold, and a fair sprinkling of sharp sand; mix well and use the compost rough. In potting see that the pots are properly drained and let the bulbs be so placed in the soil that the upper surface will just be visible. A four-inch pot is the best size for the successful growth of the bulbs, one in a pot.

After planting they should be well-watered and placed in a dark cellar to make root, giving them water whenever it may be necessary. In about eight or ten weeks the pots will be well filled with roots, and a vigorous top growth will begin to set in; then a few of the most forward can be brought into a light, sunny situation, where an average temperature of 55° is maintained. Water should be given whenever necessary, and an abundance of fresh air whenever possible; keep the plants free from dust and support the flower spikes with neat stakes, if it becomes necessary to keep them erect. If the plants are placed in a low temperature when in bloom the flowers will remain in perfection a long time. After the flowers commence to fade the stalks can be removed, and as soon as the foliage commences to decay the bulbs can be removed to the cellar, placing them in a light situation, and the supply of water gradually reduced. When the leaves have fully ripened, the bulbs can be removed from the pots and packed away in bags or boxes for planting in the fall. Bulbs that have bloomed inside are altogether useless for another season's use in the same manner; they may be planted out in the border where they will give a good account of themselves the ensuing spring. A fresh supply should be obtained for potting. Hyacinths differ in habit very much, some varieties throwing up a strong flower spike with a loose truss, others have a short stem with a compact truss; the robust-growing kinds have large bells, while those less robust have an immense number of small bells. The bright red colors are all of a compact habit. There are so many varieties listed in catalogues that it is quite difficult to select a few of the best, but one will not go astray in selecting any or all from the following list:

Single.—Amy, Baron Von Thuyll, Chas. Dickens, Gigantea, Grandeur a Merveille, Herman, Ida Jesckko, La Pluie d'Or, Mt. Blanc, Norma, Veronica.

Double.—A la Mode, Anna Maria, Bouquet Royal, Czar Nicholas, Goethe, Jenny Lind, L'Esperance, La Tour d'Auvergne, Blocksberg, Noble par Merite, and King of Wurtemburg.

It may be well to mention that the named varieties should always be used for pot culture, as the mixed varieties which are offered at a much lower price seldom produce as satisfactory results when grown inside.—Vick's Magazine.

THE CULTIVATION AND MANAGEMENT OF HOUSE PLANTS.

THE cultivation of flowers is an occupation that improves alike the body, mind and heart. It is an almost certain indication of purity and refinement. We can afford to cultivate and study flowers, if for no other reason than their cheerful surrounding. Many do without flowers because they think they cost too much time and trouble, but all things worth having cost considerable and anything worth having is worth working for. Oftentimes the partial success, or in many instances, total failure in the cultivation of flowers is due to the fact that we try to do too much. No one should have more plants than one can fairly manage or take care of; too often do we see many plants crowded together in a poorly lighted window, compelling each plant to take on a form never intended by nature, and foliage quite different from that desired by the owner. One of the chief requisites in the management of house plants is plenty of sunshine, next an atmosphere neither too dry nor close, and a uniform temperature, lower during the night than during the day. As the days become longer and brighter, more room between the plants must be given; for nothing detracts more from the appearance of plants than standing too close when growing rapidly. More careful attention should also be given to proper ventilation on all suitable occasions. This is absolutely necessary to the health of plants.

With regard to the soil best adapted for pot culture: Soil for pot plants should always be carefully prepared. For this there is no better foundation than well decayed turf that is full of root fibres. Many plants would need nothing more; strong feeders should have manure added. Perhaps the soil that will best suit the majority is two parts decayed turf to one part of well rotted manure and one part sand, which will make a soil that will not bake.

Watering.—Rain water is better than spring or well water. Hard water may be greatly improved by adding a drop or too of ammonia, or a little soda, a small piece about the size of a pea to every gallon of water used. Morning is the best time to give water, and evening next. Never water house plants when the sun is shining brightly on them. The supply of water must be regulated according to the demands of the plants. Apply when needed; but never in excess. The condition of plants and soil is the best guide. Never give water when the soil is moist to the touch. The leaves of all large-leaved plants should be thoroughly sponged off at least once a week with tepid water. This tends to keep the plants in health and free from dust. Nearly all plants require more water when in bloom than at any other time, more in a warm temperature than in a cold, and more when in a state of active growth than when at rest. Plants

in open rooms usually require water once a day and some demand it twice. Drainage in the pots must always be attended to, as stagnant water at the roots will result in diseased plants and impoverished flowers.

Gas.—Its use for illuminating is a drawback to plant culture in the same rooms. Plants are better off for being in rooms that are never lighted much artificially. If the plants can at night be cut off by partitions, or moved to unlighted rooms, it should be done. If not, harm may largely be prevented by covering them with paper covers, while the gas is lighted.

General Management.—Pay strict attention to airing, give air when opportunity offers; try to secure a uniform temperature without draught. All the light obtainable at this dark season is needed. Roll up the curtains clear to the top during the day. Give extra protection to plants during severe cold nights. Plants coming direct from the florist's often fail when set in a window at this time of the year, because the tender green house plants is not used to the exposure in the much colder window. Be sure to get plants that are thoroughly hardened, and to warm the rooms where such plants are in the window, sufficiently to carry them over this change in a gradual way. Be sure to give all plants in the window the space they require. Crowding is in no case desirable. For the better protection of plants near the window, in severe cold nights the plants may be taken from the window, placed upon the table in the centre of the room, and covered with paper.

I have frequently been asked the cause of plants dropping the leaves, whenever this occurs, we may be sure, the health of the plant is impaired in some way. The plants may have been kept too warm, or too cold, given to much water or not enough of it; it may have been injured by crowding or with strong stimulants, or allowed to become pot bound. The first thing to be done is to make a thorough examination. Knock the plant out of the pot and see if the soil is too dry or too wet, or whether the feeding roots are destroyed.

Injudicious watering or applications of strong liquid manure. The treatment usually given without further examination may result in the death of the plant. Re-potting in light and rich, rather dry soil, especially if a new or freshly cleaned pot is used, will give relief in most cases. The pot need not be larger than to give about an inch of soil around the ball of the roots, putting it into a half shady place, water enough to settle the soil around the roots, and give no more water until new, vigorous growth commences; the soil should be kept moist all through but never wet for any length of time. Never use pots of a larger size than is absolutely necessary, and plunging them in cool ashes encourages root formation. One may readily enjoy a succession of flowers all winter long, by forcing a few at a time, and replenishing as the bloom fades away. Hardy plants of every description dislike strong heat, preferring a cool moist atmosphere, with plenty of air in mild weather, and free access to the sun's rays.

For window culture, the plants should be started either in a cool greenhouse or sunny window in the domestic departments, whence they may be removed to

the living room as the bloom begins to appear. Give plants as much light as possible during the day, and darkness with a lower temperature at night. A uniform temperature of 60 to 70 degrees in the day time and 40 to 45 degrees at night, will give the best results. Turning the plants towards the light should not be done, unless done regularly.

Besides light, house plants require a good supply of fresh air. Ventilation is absolutely necessary.

Woodstock. S. S. SCARFF.

THE IDEAL STRAWBERRY.

The "ideal strawberry" is often mentioned when horticulturists get together, and there is a tolerably unanimous expression of the conclusion that this much-desired fruit has not yet made its advent. What qualities must a strawberry (plant and fruit) have to entitle it to this distinction? The plant must be a vigorous grower, with a thick, stocky leaf, and it must be a free producer of runners. It must be perfect flowered—we must not be compelled to plant others with it to insure its fruitfulness. It must be productive, fully as much so as the most productive varieties now under cultivation—more so if possible. The berry should be large—not monstrous in size—and it must be symmetrical in shape—not like Sharpless, Bubach and other lobe-shaped fruits. Color is not so important—it should be of solid color, either scarlet or crimson, and colored throughout the berry. It must be solid and firm enough to bear shipment a reasonable distance, and last, but not least, it must be of high quality, say, somewhat better than the Gandy, which is a very good berry. We have no such berry yet, but it is not unreasonable to believe that we will achieve it. Whether we are to get it as a chance seedling or whether it will come as a result of careful and scientific crossing, none can say.—American Agriculturist.

Yield of Blackcaps.—How much will an acre of raspberries produce, taking the average of three crops? Opinions differ widely. We could begin with zero on the one hand, and rise to 6,000 quarts. In an enquiry made here in 1893, says a recent Cornell Station Bulletin, the average of 58 replies of berry growers was 2,493 quarts. One gave his yield (which must have been on a small patch and amply multiplied) as 9,600 quarts, whilst another confessed to but 576 quarts. A good yield for the second crop is 3,000 quarts, or 90 to 100 bushels per acre. Willis P. Rogers tells me that his largest field crop of Ohio, the third year after planting, was 16,000 quarts on four acres, and a half acre of this land was not up to the standard. From extensive inquiries of evaporator men, however, I find it to be a general opinion that the average crops of the country, one year with another, will not exceed 1,200 quarts per acre, or 300 pounds of dried product.

❋ Novelties. ❋

FIG. 897.—RED CROSS CURRANT.

RED CROSS CURRANT.

We have for many years been looking for a new currant which would be an improvement upon older varieties; we have looked in vain until we heard of the experiments made by Jacob Moore, and accepted an invitation to call at his place. There we saw some twenty or more seedling currants all in full bearing, all produced by crossing flowers of different selected varieties in the most scientific manner. All of these varieties of currants were exceedingly productive, the difference being that some varieties were larger or better quality than any others—longer clusters, longer fruit stems, brighter color, etc. One variety in particular was larger than any of the others, and of superior quality; also exceedingly vigorous in growth and very productive, with long fruit stem. This variety we have purchased of Mr. Moore, paying him $1,250 cash for it, and have named it the Red Corss currant. The cut given above was drawn from a photograph made at the Geneva Experiment Station. Notice that the berry is peculiar in shape and that the blossom end of the currant is almost imperceptible, which we consider a remarkable feature. Red Cross is a marked and distinct variation from all other currants.

HORTICULTURAL SOCIETIES.—It is encouraging to note that the horticultural societies that were formed last year are for the most part prosperous, especially those who have been wise enough to choose officers that have a real interest in the prosperity of the society. Here is a line just received from Mr. James Lockie, the enthusiastic president of the Waterloo Horticultural Society. He says: "We hope to have nearly, if not quite, 100 members in our Horticultural Society the coming year. These will not be persons who have to be urged to join, but who seek to join. This is what makes an enthusiastic society. From all appearances our society is likely to be a permanent one and productive of much good."

The Canadian Horticulturist

SUBSCRIPTION PRICE, $1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

Notes and Comments.

CREDIT.—On page 437, last year, article on Bank Forcing House should be credited *American Agriculturist.*

THE SECOND REPORT of the Ontario Fruit Experiment Stations will be a very valuable one and contains a large number of illustrations. It will be bound in with the report of our Association, and all members will receive it as soon as it is issued.

GRAPE VINE LEAF HOPPER.—Professor Fletcher writes he has had no trouble in treating grape vine leaf hopper and rose leaf hopper with kerosene emulsion. This is an insect so widespread and so injurious, that a general persevering attempt should be made to prevent its ravages.

NIAGARA FALLS SOUTH Horticultural Society had a fine exhibition about the middle of September. There were about 450 entries of fruits, flowers, etc., and an attendance of about 600 people. A list of the exhibits was published but no money prizes were given, the Society's money being spent in the interests of the whole membership, rather than in paying a few prize winners. We would like frequent letters from the various affiliated Horticultural Societies, that we may know of their progress.

PLANT DISTRIBUTION.—Under open letters Mr. Saunders, Director of the Central Experimental Farm. Ottawa, kindly offers us such ornamentals as can be spared for distribution in 1896 among our members. At the Woodstock meeting he exhibited a pressed specimen of a new Ampelopsis resembling A. Veitchii,

otherwise known as Japan Ivy, but much hardier than the latter. It is a native of Northern Ontario, but has some of the habits of growth of A. Veitchii. Mr. Saunders hopes to be able to propagate this hardy form and, if successful, will donate a large number of these plants to our Association in 1897.

GARDEN NETTING.—Birds are so destructive of cherries that the use of garden netting for special varieties might well repay the expense. Mr. Henry R. Boardley, Lowestoft, England, is engaged in handling this line of goods, and writes giving us the following low quotations :—

100 yds.	long,	1	yd.	wide,	per	1,000	yards.	.....	£1	3*s.*	9*d.*
"	"	"	2	"	"	"	"	"	.....	2	7	6
"	"	"	3	"	"	"	"	"	.....	3	11	3
50	"	"	4	"	"	"	"	"	.....	4	15	0
"	"	"	6	"	"	"	"	"	.....	5	2	6
25	"	"	8	"	"	"	"	"	.....	5	0	

Or any other lengths or widths at proportionate prices. Term, 5% for prompt cash, F. O. B. here.

SPRAYING FOR FUNGI was little needed in 1895, but that is no guarantee that it will also be unnecessary in 1896. We would advise all orchardists who aim at producing yearly crops of first grade fruit, to be prepared for most faithful work this season. The first warm days of spring, before the leaves open, should be taken advantage of for applying sulphate of copper. Prof. Taft, of Michigan, writes as follows in the American Agriculturist on this point : "It is now about three years since a strong solution of copper sulphate first came into use as a fungicide upon the bare branches of trees before the buds opened, and the results obtained from its application have been so favorable that it is recommended by nearly, if not all, of the spraying calendars. When used at the rate of from one pound to fifteen or twenty-five gallons of water, it destroys the mycelium of such fungi as winter upon the branches, and prevents the germination of such spores as may come in contact with it; but at this strength it will destroy the foliage, hence it cannot be used later in the season."

UNIFORM SIZES OF FRUIT PACKAGES.—Perhaps it does not matter what the sizes are, but it is important that all growers should adopt uniform sizes in shipping fruit. Peaches and plums are commonly shipped from the Niagara district in a handle basket, supposed to hold twelve quarts, and usually called the twelve quart basket; but some makes of these baskets hold only eleven quarts. Now there is no objection to an eleven quart basket, but the fault consists in selling it for a twelve quart basket. The following standard packages adopted by the Capetown Board of Horticulture may be of interest in this connection, though not just suitable to our needs. The standards, we understand, are as follows :—Grapes, apricots, and plums, 12, 14, and 48 lb.; apples, pears, and peaches, 10, 20, and 40 lb.; cherries, 1 and 12 lb.; guavas, 12, 24,

and 48 lb.; loquats, 10, 20, and 40 lb.; strawberries, 1 and 10 lb. This resolution has been communicated to the Capetown Corporation, with the request that these standard packages be adopted for the sale of fruit on the Capetown market, such standard not to contain less than the weight above mentioned, and to be known as whole, half, and quarter, and pointing out also the necessity of very stringent market regulations about the grading of fruit, which should be of uniform quality in the package.

HORTICULTURAL SOCIETIES.—Our readers will be interested in knowing that new horticultural societies affiliated with the Fruit Growers' Association continue to be formed in many parts of the province. There were nine of these societies formed early in January of 1895, and we have reports of six more that will be formed in January, 1896, namely, Dunnville, Leamington, Windsor, Simcoe, Chatham and Hagersville. These societies, to a great extent, have been formed through the agency of Mr. Thos. Beall, of Lindsay, our Director for District No. 5, who has taken a great interest in thus extending the work of our Association.

Mr. Beall writes with regard to these societies as follows:—"The objects in view by those who are supporting me in organizing new horticultural societies are various, but the main object is to cultivate in the community a greater love for the science of horticulture in all its branches, and to do this mainly by inducing its members to expend its funds in holding meetings for discussion, and for hearing lectures on the theory and practice of improved horticulture; in promoting the circulation of horticultural periodicals, in distributing among its members new and valuable kinds or varieties of plants, shrubs, bulbs, seeds, etc., or in offering prizes for essays on questions of scientific inquiry relating to horticulture, but not for holding fairs or exhibitions as generally understood, because such fairs are generally so conducted that a large portion of the funds of the society is thereby expended in encouraging the growth or production of things that should be discouraged, and also because comparatively few of the subscribing members receive any direct benefit whatever from such fairs. Hence the unpleasant and tedious task devolving upon a few of the directors every year of collecting the annual subscriptions.

"By conducting the affairs of horticultural societies on the plan faintly indicated above, and which plan is practised by most of the new societies, every member receives an equal share of the advantages secured by the expenditure of its fund (excepting any small amount which may have been paid for essays), and, by pursuing this plan, the unpleasant task of dunning the old members, and of soliciting for new ones for their subscription fees for succeeding years becomes unnecessary, as the old members and many new ones do voluntarily call upon the treasurer, or at some appointed place, and pay their subscriptions, in most cases, before the new year commences."

OUR MEETING AT WOODSTOCK was a good one. The local Society, under the presidency of Mr. T H. Parker, took a great deal of trouble to ensure our comfort. The Board of Control of Experimental Stations spent all day Tuesday discussing the work of the Stations; Wednesday was a day full of work; Thursday morning was spent in visiting the town, and in the afternoon the Hon. John Dryden gave the Association a very interesting and valuable address, indicating the lines upon which he desired the aid of the Association in advancing the fruit interests of the Province. Thursday evening was given to Horticulture. An interesting paper on House Plants, by Mr. Scarff, of Woodstock, we give in this number. On Friday morning Mr. Shuttleworth, representing the Fruit Growers' Association, spoke at considerable length upon varieties of apples for export; grading, packing and selling apples. His views of apple grading coincided with those of the many growers present, who believed that the grades as defined by the Dominion, were those most desirable, not only for export but also in our home markets. The meeting closed at noon on Friday, the same officers having been re-elected for the year 1896. There are three new names on the directorate, viz., J. L. Huggard, Whitby; J. S. Scarff, Woodstock; and John Stewart, Ben Miller. The discussion was taken verbatim by our official reporter, Mr. Thomas Bengough, of Toronto; and our annual report will be placed in the hands of the Department for publication, at as early a date as possible.

THE MICHIGAN HORTICULTURAL SOCIETY was well represented by Messrs. L. B. Rice and L. D. Watkins. The latter gentleman has a private park of 65 acres, and frequently brings a carload of poor children from the city to enjoy the shade while he feasts them with peaches, an illustration of the way wealth and philanthropy may unite in making the world happier. These gentlemen both contributed much valuable information.

THE CENTRAL EXPERIMENTAL FARM was well represented by Director Saunders and Horticulturist Craig, both of whom materially contributed to the success of our meetings. The subject of the blossoming period of our fruit trees, dealt with by Mr. Craig, is a most important one, pointing out that orchards were often rendered barren on account of infertile bloom, which needed other varieties planted near, and blooming at the same time, to ensure fruitfulness.

GUELPH AGRICULTURAL COLLEGE was well represented by President Mills and Horticulturist Hutt. In his address the former explained that their work was educational rather than experimental; yet much experimental work was in progress.

MR. D. W. KARN, President of the Board of Trade. Woodstock, has extensive factories, pianos and organs. He has a beautiful home on the street leading to Woodstock College. His paper read on Thursday evening, on Private Conservatories, well deserves careful perusal, and will be published in this journal.

Question Drawer.

Labels for Trees.

772. Sir,—A short time ago I picked up in my garden a zinc tree label marked "Washington, 1871, Beadle." I well remember marking all my trees with these labels, with ink made from a recipe given in the Canadian Horticulturist, but have lost the copy. Could you give it me? The label has been exposed to the weather ever since, and is as good as ever.

F. W. Fearman, *Hamilton.*

Zinc labels are excellent for outdoor use. Even lead pencil marks on zinc are indelible. Some that were written ten years ago, are as legible as at the first. An ink for writing on zinc may be prepared as follows :—Verdigris, 1 oz. ; salammoniac, 1 oz. ; rain water, ½ pint ; mix in an earthen jar. Mr. Hutt, of Guelph, uses celluloid labels, and writes with an ink made of varnish, drop black and turpentine.

Trellising Grape Vines.

773. Sir,—Regarding trellises or espaliers for grape vines, I venture to suggest that the best has not yet been attained, and that a more convenient form of support than any of those generally seen would possibly increase the number of vines planted by making the culture easier and the vines more prolific.

M. Lepper, *Picton, Ont.*

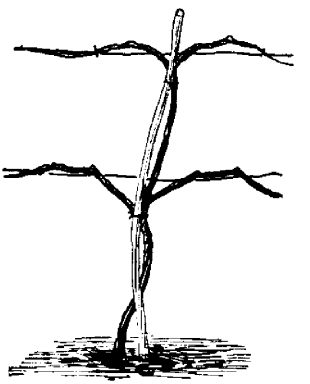


Fig. 897.

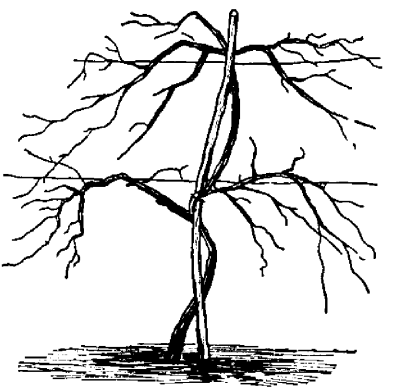


Fig. 898.

Probably no simpler contrivance for supporting the vines than the Kniffen system, shown in the accompanying illustrations, can be devised. Two wires only are needed as supports, and posts may be planted twenty feet apart, with lighter poles between. Every spring the wood is pruned back to four arms, two on each wire ; no summer pruning or tying is needed, because the young growth simply hangs down from the horizontal arms.

How to Treat Rex Begonia.

771. SIR,—I have some Rex Begonia five years old. They did well for four years, but after that they lost the leaves, and almost stopped to grow. What is the best way to treat them and what soil is the best?

JUSTUS ROEDLER, *Milton, Ont.*

Answered by H. L. Hutt, O. A. C., Guelph.

It is not advisable to try and keep Rex Begonias after they are three or four years old. Propagate new plants from leaf-cuttings, and have enough of these coming on every year to take the place of the old ones. The begonia thrives best in a soil in which there is good admixture of leaf-mould and sand.

✻ Open Letters. ✻

Strawberries in November.

SIR,—At the meeting held November 30th, to consider the feasibility of organizing a horticultural society, Mr. C. Curtis, a noted grower of strawberries in this town, exhibited a small box of strawberries which had been gathered in his garden on the previous afternoon. The berries were Wilson Albany, of fair size and in good condition. This speaks well for this locality as a fruit growing district. The berries were grown in the open air without protection.

THOS. BEALL, *Leamington.*

A New Pear.

SIR,—I wish to bring before your notice a new pear. Seeds were planted twenty years ago and when they were large enough they were grafted, but one of those not grafted turned out to be the finest pear we ever saw. Two fruit growers who saw it said the flavor is the very best, and think it ought to be introduced. Probably I will send you a sample next season. I think it originated from the seed of either Flemish Beauty or Bartlett. It resembles the former somewhat in shape, but is longer and a trifle more watery. It ripens about the 20th of September. The color on one cheek is deep red and shades out to a rich yellow on the other side. We have no better pear for cooking.

W. H. SHOUP, *Cheapside.*

Our Plant Distribution for 1896.

SIR,—With regard to your next distribution of trees and plants, I will discuss the subject with Mr. Craig, but I doubt if we shall have anything in quantity this year which would be of value to you. We have some young cotoneasters, such as Acutifolia and Vulgaris, but they are only one year old seedlings, and would, I fear, be too small. They would, however, come in another year. We have a few Acer glabrum from British Columbia, but could not spare more than 25 or 50. We might also spare you 50 to 75 Picea pungens. We could let you have 100 to 150 of a dense form of Rhamnus frangula, if you thought that was sufficiently ornamental. We have grown them for hedge purposes, and the plants we have are strong two year seedlings. We could also spare 100 plants of Bignonia radicans raised from seed ripened at Windsor, Ont. I expect these seedlings

would be hardier than any plants which could be purchased from nurserymen, as they are usually grown from seed ripened farther south. I think we also have 40 or 50 plants of Asclepias tuberosa we could spare you. This, although native in Western Ontario, is very little known in gardens, and it is very ornamental. We also have a few Berberis Thumbergi two year old seedlings of which we could spare probably 40. Beyond this we have nothing which I can suggest.

WM. SAUNDERS, *Central Experimental Farm, Ottawa.*

Apples in Edinburgh.

SIR,—The cases of apples which you sent are very nice, and we will, no doubt, make a satisfactory price for you, The Cranberry Pippin, however, is by no means a favorite here. Baldwins, Spys and Kings are much more likely to maintain good prices year after year.

Mr. John Penman's letter in the CANADIAN HORTICULTURIST is just to hand. Mr. Penman omits to say that the prices he paid were for the choicest home hothouse grapes and tomatoes and for French pears, we presume Glout Morceau.

Honesty in packing is certainly very essential to success, but we do not know of any prejudice existing as to American goods, certainly not apples, as after they come to hand, other apples have little sale. Grapes, we fear, will never succeed, if the parcel we had from a Canadian grower is a fair sample of the flavor; not to speak of the condition in which they landed. Plums we are almost sickened of by the time our own crop is exhausted, but we see no reason why pears should not do well.

We recommend the French mode of packing, which is unknown with you. We shall be pleased to explain fully. It saves the fruit and helps the price, besides making it attractive, a very strong point, we assure you.

We noticed a letter, copied, we think, from a Glasgow paper, published in the CANADIAN HORTICULTURIST some little time since, about packages, Barrels vs. Cases. It is a pity that people who have no practical knowledge of the trade take it upon them to write to papers, as they generally mislead the public. For general purposes, nothing beats the Canadian apple barrel, though where fancy fruit is exported, a smaller package, not the half barrel, however, which does not take, but such a package as the case you use, holding fifty-six pounds net, is desirable. Yet since the demand for these, at figures to pay for the extra labor and expense, must always be limited comparatively, it follows that to make this the rule would only be to bring down the price of the case to the ordinary level, and all the extra labor and expense would be lost.

The British public generally do not use apples for the table or dessert, except to a fraction of the extent that they use them for culinary purposes, and for the latter they are keen enough to combine quantity with quality to the greatest possible extent. We are fully convinced that any attempt to materially increase the number of packages, except in the case of fancy packages, would be resented by the whole trade, unless it brought relatively increased profit or commission. We venture these remarks, thinking they might be of service to you and other fruit growers.

WOOD, ORMEROD & CO., *Edinburgh, Scotland.*

Small Fruits in Scotland.

SIR,—The samples of Canadian strawberry plants you sent me arrived in very fair condition. The most promising of all is your namesake, the Woolverton. We had a few fruits on it, and they were good in flavor, color and consistency. The best strawberry I grew last season was the Sir Joseph Paxton. Some of the berries were simply magnificent, and my highest price was 15 cents per pound in the market. My farm, just three years old, yielded forty-five tons of strawberries, eight tons of raspberries, fourteen tons of gooseberries, besides odds and ends of red and black currants, and a few apples and plums. Within the next year or two I expect better crops of the latter, including pears, as I have planted 5500 trees which are growing well. This year we had a bumper crop of apples and pears in Scotland, but nearly all was cleared off before yours appeared in the market. Scotch stuff sold very cheaply, although the quality were very good. For good, fruit exporters on your side may secure extra prices, but, as the preserve makers get their stock pretty well made up with Scotch apples, slacks and inferior fruit will not bring much on this side.

ROBT. SCOTT,
Clydesdale Preserve Works, Carluke, Scotland.

Our Book Table.

APGAR'S TREES OF THE NORTHERN UNITED STATES, their study, description, and determination, for the use of schools and private students, by Austin Apgar, Professor of Botany, in the New Jersey State Normal School.

This is a very neat book of 224 pages, full of illustrations, and proving a complete and inexpensive guide for the amateur to the study of our native trees. It also gives full directions for the collecting of leaves, fruits and woods, forming a kind of herbarium that would possess peculiar interest for any student of science. The books comes to hand from Mr. J. R. Fairchild, Washington Square, New York City, who will give our readers all further information.

TREES OF THE NORTHERN UNITED STATES.—Mr. J. R. Fairchild, Washington Square, New York, writes that the price of this interesting work is $1.00, on receipt of which he will send it by mail postpaid; or it may be ordered from this office.

A BOOK ON SILAGE, by F. W. Woll, published by Rand, McNally & Co., Chicago, Ill. A new work just published, dealing in an exhaustive manner with the whole subject. Chapter I. is devoted to Silage Crop; II. Silos; III. Silage; IV. Feeding of Silage; V. Comparison of Silage and other Feeds; VI. The Silage in Modern Agriculture. Price 75 cents, free by mail from this office.

THE PASSING OF THE PLOW is the subject of an interesting pamphlet published by the John Deere Co., Moline, Ill, showing the importance of subsoiling.

GEORGE BATTEN'S DIRECTORY OF THE AGRICULTURAL PRESS, for 1895. A list of all Agricultural and Horticultural papers, etc. A new and valuable work, published at 38 Park Row, New York. Price 75 cents.

Apples in Liverpool. Barrels vs. Boxes.

Messrs. J. Adam, Son & Co., write: We desire to call particular attention to an important arrival of boxes, which package it is sought to establish on this market. The fruit was of good quality, while the packing and grading were everything to be desired; still, we are afraid shippers will not find results remunerative. Of course, to introduce anything new is a matter of time, but, so far as we can see at present, the preference is decidedly in favor of the barrel, which has many recommondations, besides being the standard and recognized package of the trade.

QUOTATIONS: *Canadian.*—Barrels—Baldwins 12/3 to 21/; Greenings 12/ to 17/6; Spys 12/6 to 18/6; Russetts 11/ to 17/6; Canada Reds and Ben Davis 14/ to 18/; Kings 19/ to 27/. Boxes—Kings 5/ to 8/3; Snows 6/9; King Pippins 5/9; and Russetts 3/6 to 5/6.


HAPPY NEW YEAR
1896
1895