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HOWELL.

THE
Canadian Horticulturist

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THE HOWELL PEAR.



IF the pears grown for market at Maplehurst, one of the most satisfactory of its season is the Howell. Its size, freedom from scab, worm holes and other blemishes, and clear, yellow skin at maturity, combine to make it a very attractive pear for market. It ripens about the end of September, just when the Bartlett season is over. We do not know of any other variety more desirable at this season, unless we except the Duchess which is often very inferior in appearance owing to curculio knots. The Sheldon, of course, surpasses them all for dessert purposes, but the tree is not nearly so productive and the fruit is not more attractive in appearance. In the estimation of fruit growers generally, the Howell is one of the best of the varieties of American pears.

The tree is an upright, vigorous grower and very productive.

The pear is thus described by Downing: Fruit rather large, roundish, pyriform; light, waxy color, often with a finely shaded cheek, thickly sprinkled with minute russet dots and some russet patches; stalk medium length, inserted without cavity, sometimes by a ring or lip, sometimes in a small cavity; calyx open; segments recurved; basin rather large and uneven; flesh whitish, juicy, melting, brisk, vinous. Quality very good; season, September, October.

It originated with Thomas Howell, of New Haven, Conn.

THE AMERICAN WHITE ELM.



GOOD professional landscape gardeners and architects do not need any more information about this tree; I am not writing with a view of trying to instruct them, but because so many who are not of the profession have erred in not assigning it situations for which it is most suitable.

This much, however, may be said about many trees, both native and foreign, but at present I will only mention the elm. If I were to speak of the elm as a forest tree I would tell you about a straight stick of square timber seventy-five feet long, which was gotten out of a swamp forest by a negro near here a few years ago, but just now I will speak of it only as a shade and ornamental tree.

For parks, avenues, village streets and school grounds no tree is so well adapted. Its high arching branches affording ample shade for comfort, without dense foliage like some other trees, which preclude the free circulation of air, which often is of more importance than shade.

Lately I drove over a road, two miles of which is straight and nearly level, lined on either side with a straight monotonous row of hard maples growing rather closely together. Their low spreading branches meeting over the road, and giving the roadway somewhat the appearance of a dismal tunnel, which during summer time is kept continually in a muddy state. I would not be understood as offering one word of disparagement of the maple. They are, when judiciously appropriated, both beautiful and useful, but a tree which is ornamental and useful in certain places, may be unnecessary and displeasing in other places. For shelter belts, sometimes called wind breaks, I would not recommend elms, because they soon override other trees of less robust growth, such as maples, beeches, birches, oaks, hickorys, walnuts and lindens. The elm is a majestic tree, and needs more head-room than any tree that I know of.

Elms send out wide spreading roots near the surface devouring what plant nourishment the soil may contain, hence they should not be planted near fruit trees of any kind.

As a wayside tree the elm is peculiarly adapted, not only because of the lofty arch its branches form, but being free from low spreading branches, under its shade many wild flowering plants and shrubs thrive finely; thus beautifying the road margins, which, under a dense shade, are usually covered with dead tree leaves, preventing even the growth of native ferns.

Speaking of wayside adornment brings to my mind the most beautiful piece of road I ever travelled; many miles of which there grows on either side a great variety of native trees, planted by nature at irregular distances, with an undergrowth of ferns, wild flowers and shrubs, with occasional open views of lakes

and mountains alternating with shady spaces, altogether making the road exceedingly attractive.

The general habit of the white elm gives a high wide-spreading top, yet we now quite frequently find individual trees, which are natural weepers after they attain a considerable height, forming exceedingly picturesque trees.

Such, however, are merely accidental, because seed from them does not produce a large proportion of true weepers, although many of the seedlings are more inclined to weep than of those grown from seed of stiffer growing varieties.

Elms, when not planted too closely, grow to a great size and live long. In the Village of Portsmouth, there grows one which is said to be over 100 feet high, with branches extending 45 feet on either side. Old inhabitants tell me this was an old tree 75 years ago, so it is now probably more than 150 years old, and shows but little sign of decay.

Elm seed should be sown soon after it is ripe, because if kept dry it soon loses its vitality. The seedlings should be left to grow in the seed-bed the second year, after which they should be planted in nursery row, and transplanted again in two years, when they can be lifted with abundance of fibrous roots.

Cataraqui.

D. NICOL.

CONCERNING PEARS.

A writer in the New England "Homestead" who says he has been raising and handling for the Boston market about all the well-known varieties of pears for 25 years past, gives the following points in relation to that fruit :

"The pear never can be classed with the apple and peach as a food product. The peach pickers of the South during picking season live principally on them, while the apple furnishes pies and puddings used throughout the world. Where does the pear come in? Only to tickle the fancy of some well-fed epicure. The sweet flavor of the Seckel properly ripened pleases all, the tart and pungent flavor of the Beurre d' Anjou and Louise Bonne de Jersey have their friends, although the appetite of our pickers in the orchard is hardly ever attracted to the Anjou pear as it is to the juicy Sheldon and Beurre Bosc. The Bartlett takes the lead, coming as it does in the proper pear season, the others following in rotation. Each and every variety has its place to decorate the banquet table in the holiday season. The poorest flavored pear, the Beurre Clairgeau, is often used on account of its bright rosy cheeks and attractive looks, the guests never eating but one and wishing they hadn't begun after the first bite. The intelligent housekeeper fills her preserve jars with the tart-flavored Louise Bonne when she can get them mixed with quince, making a most delightful preserve. But as a table luxury the Bartlett, Sheldon, Beurre Bosc, Lawrence, de Anjou and Duchess, ripening about in the order given, will always be wanted to supply the family as well as hotel trade in all our towns and cities."

VINEGAR MAKING.



THE Farmers' Call gives the following hints on vinegar making, which, it says, are based on years of practical experience :—One of the common uses now made of the apple crop in many sections, is to convert a large part of it into vinegar. With many farmers this has entirely superseded making cider for a beverage, and from the fact that less care is necessary in gathering the fruit, it is found fully as profitable. When made in large quantities the process begins as soon as enough apples have fallen from the trees to furnish a supply.

The apples are ground in mills, as for cider, and the juice may be expressed at once, but more commonly the pomace is kept in vats or hogsheds until it has fermented and become quite sour before the pressing is done. This sour cider is then allowed to settle and is run into barrels, but not quite full. Throughout the fall season these barrels should be kept in the sun, covered with loose boards as a protection to the cooperage, and the bungs should be left out until it is necessary to remove them for the winter. The bungholes should be covered with bits of thin netting that will keep out insects without excluding the air.

Experience has demonstrated that a barrel contains about the right quantity of liquid, and an open bunghole gives sufficient exposure to the atmosphere for making vinegar of the best quality by this slow, natural process. Some dilution with water is often necessary where the cider is so rich in saccharine matter as to prevent its turning to vinegar in a reasonable length of time.

Vinegar barrels should be iron-hooped and be kept well painted to resist exposure and prevent leakage. The natural process will require a year or more of time to produce an article acid enough to meet the requirements of the market, but it will continue to grow stronger by age, and will admit of sufficient dilution to compensate for loss by evaporation and leakage.

The natural process of vinegar making may be accelerated by occasionally running the cider from one barrel into another, and thus exposing it for a time more fully to the air. Adding a gallon or two of strong vinegar or a little mother to each barrel of sour cider is another method. Still another method is trickling it down through beech chips or shavings, and corncobs saturated with strong old vinegar.

Summer pruning is desirable because the wound heals rapidly, and is not followed by an excessive growth of water sprouts. The objection to summer pruning is the supposed shock to the tree by cutting away boughs in the growing season. The objection is mostly avoided by annual pruning and a little attention to water sprouts.

THE USE OF SHADE TREES.



REES, other than fruit trees, are planted mainly for two purposes, ornament and shade. For ornament alone, we desire trees that are beautiful in color or shape of leaf, color of bark, habit of growth, character of flowers or oddity of habit. Cut-leaved trees and those of a graceful, weeping habit do not cast a great amount of shade, nor attain great size; neither are they able to stand neglect or abuse. They may be said to belong to a higher order than other trees, and with their higher structure comes a greater and more complex development of parts, which necessarily

renders them more delicate and susceptible to injury, climatic conditions and changes. A purple beech or cut-leaved birch would be as much out of place, even if it could be made to grow, in a crowded city street as would a mammoth oak in the back yard of a 25 x 80 foot city lot. For shade purposes, then, it is desirable to secure trees which present characteristics somewhat different from purely ornamental trees. Some of them have directly opposite characteristics, others similar ones; as the character of the one class approaches that of the other the trees may be used for the one purpose or the other. Shade trees may be used for ornamental purposes, but the purely ornamental trees, so called, are not generally adapted for shade or street planting.

The chief requisities of a shade tree are that it be large and shapely, with abundant foliage, so that the sun does not shine through to any extent. A street tree must possess, in addition to the above qualities, a disposition to transplant easily when of good size, ability to grow well in poor, dry, hard soil, be capable of withstanding cold, heat and dust, and have few or no enemies. Along a country road or wide village street the soil is usually better than in a city street, where either the good surface soil has been removed in grading, or sand or other equally poor soil has been carted in on top. Paved streets have gutters that carry off the water, and the soil beneath is usually very dry and hard. In the city there is also a great amount of dust, smoke and soot, which is fatal to many trees, especially to evergreens. The conditions which a tree meets in the city street are directly opposite to those of its natural habitat; therefore, it is not strange that we see few large, healthy trees in the thickly settled streets of any city of considerable size or age. Most of the large trees we do see were planted when the city was a mere village, or they came up naturally before the street was laid out. The roots have gone far and deep in search of food and moisture, and became established before the present conditions existed. Along

country roads, in villages and the suburbs of cities, where the streets are not paved, more of the natural conditions are present, and dust is the only serious enemy present. Thus a great variety of trees can be used in such places, and better and more perfect specimens can be grown. On the lawn, in parks or private grounds, the chief natural condition which does not exist is the shade and protection of other trees that is found in the forest. By planting in groups this can be partly afforded, but most trees thrive by themselves after a year or two of slight protection. A nursery-grown tree is hardier and will stand transplanting to a position by itself better than a tree taken from the shade of its native forest. Never buy trees that are brought into the villages in wagon loads from the woods and peddled about the streets; they are usually poor investments.

For shade purposes and nobleness of stature there is no tree in the north which equals or excels the American elm. Its great height and spreading, drooping branches, place it above all rivals, but the elm-tree borer has become so serious in many sections in the east as to almost exterminate it and forbid setting any more. The canker worm and several caterpillars have also preyed on it, and it is such a high tree as to be out of reach of most spray pumps. The elms of Northampton and of Old Hadley, Mass., are famous for their stateliness and grandeur, and one who has seen them cannot but be impressed with their beauty and desirability for a street or shade tree wherever they will grow. The maple is a great favorite, and is a beautiful tree. It grows rapidly and symmetrically, casts a good shade in summer, and is pleasant to look upon in winter. Oaks are admired for their sturdiness, but are slower growing than the maples, and do not form so neat and compact a head, and they do not transplant easily. The locust presents a rough, crooked trunk and many dead branches, but is valuable for its flowering qualities and quick growth. The linden and tulip tree are of a similar character of foliage, are tall and upright, with a bare trunk for some distance and a good, round, close-growing head. A few evergreens are always desirable about a place to break the monotony of trees of a similar habit of growth and to present something green and snug in winter. Norway spruces are good while young, but are apt to be ungainly as they grow large. They should be kept well trimmed. Pines are effective, especially when planted in a group or at some distance from the residence. It is always desirable to plant a variety of trees, especially upon the home grounds.

In laying out a place, trees should be planted in groups, clumps and masses about the borders, with but few single specimens. A purple beech and other colored or exotic trees look better alone than mixed with other trees. As a rule, do not mix deciduous and evergreen trees promiscuously in the same clump, but keep them separate. So, also, do not plant oaks and willows together, for they are not only of widely dissimilar habits of growth, but the rapid-growing willow would soon hide and possibly injure the slower growing oak. Avoid so many trees that the place looks like a forest, but do not plant so

few as to give it barren aspect. Those of greatly differing characteristics should be somewhat separated. Planting for color effect in autumn foliage may also be done, and to secure this a careful study of the shades of leaf of each variety and species, with the time of their assuming different tints, is necessary. As a rule an individual tree takes on the same tint each fall, but this color would probably be made to vary by transplanting the tree to other soil. The autumn color of American foliage is among the brightest in the world, and its effects should be more sought in lawn planting.—From "Street and Shade Trees," a book issued by the Rural Publishing Co.

COMPOSITION OF THE APPLE.



HEMICALLY, the apple is composed of vegetable fibre, albumen, sugar, gum chlorophyll, malic acid, garlic acid, lime, and much water. Furthermore, the German analysts say that the apple contains a larger percentage of phosphorus than any other fruit or vegetable. This phosphorus is admirably adapted for renewing the essential nervous matter, lethion, of the brain and spinal cord. It is, perhaps, for the same reason, rudely understood, that old Scandinavian traditions represent the apple as the food of the gods, who, when they felt themselves to be growing feeble and infirm, resorted to this fruit for renewing their powers of mind and body. Also, the acids of the apple are of signal use for men of sedentary habits, whose livers are sluggish in action; these acids serving to eliminate from the body noxious matters which, if retained, would make the brain heavy and dull, or bring about jaundice or skin eruptions and other allied troubles. Some such an experience must have led to our custom of taking apple sauce with roast pork, rich goose, and other like dishes.

The malic acid of ripe apples, either raw or cooked, will neutralize any excess of chalky matter engendered by eating too much meat. It is also a fact that such fresh fruits as the apple, the pear, and the plum, when taken ripe and without sugar, diminish acidity in the stomach rather than provoke it. Their vegetable salts and juices are converted into alkaline carbonates, which tend to counteract acidity. A good ripe raw apple is one of the easiest of vegetable substances for the stomach to deal with, the whole process of its digestion being completed in eighty-five minutes. Gerard found that the "pulpe of roasted apples mixed in a wine-quart of faire water, and laboured together until it comes to be as apples and ale—which we call lambswool—never faileth in certain diseases of the raines, which myself hath often proved, gaining both crownes and credit."—*Ex.*

EXPENSES OF EVAPORATING.



HILE there is doubtless a wide field open in the dissection of co-operative fruit evaporating, says *Farm and Home*, some of the statements are very misleading, and the estimates of the cost of production are palpably incorrect. I have had several years' experience as superintendent of a large establishment of this kind, have "made apple" under a variety of conditions (and that circumstances do vary the chances for the successful manufacture of evaporated products there is no doubt). The quickest parers I have ever had would not average more than thirty bushels in a day or night of eleven hours, and such as are able to do that are paid \$1.10 to \$1.25 per day. It also requires two very smart girls to trim and spread for one parer (and in one factory that part kept three girls to each parer) at 90 cents to \$1.00 per day or night, the night gang receiving the larger price. Again, under the most favorable circumstances, it will require one pound of coal for each pound of fruit, making 600 pounds of coal in a day, at a cost varying according to the price of coal, but about \$1.50 a day for the 100 bushels of apples. So we find, not including the cost of running the drier, or an extra man to handle so many apples and remove the refuse of the packing, we have as running expense for 600 pounds of dried fruit :

4 boys (two by day and two by night).....	\$ 4 50
8 girls (four by day and four by night).....	8 00
Coal.....	1 50
	<hr/>
Total.....	\$14 00

Interest of cost of plant, breakage and wear of machines, insurance, etc., will balance the value of the refuse for either cider or jelly.

The original cost of the green fruit determines, in a great measure, the price of the dried, as when apples are scarce in the fall, good evaporated stock will command a good price. Sometimes as high as fifty cents per bushel has been paid for apples, the manufactured products selling for \$400 a ton, or twenty cents a pound at wholesale. Again, good fruit is bought for ten cents per bushel, the price for evaporated apple corresponding.

Where many hands are employed, the one who attends the drier will get good pay, which, together with various incidentals, will bring the cost of manufacture alone to from \$24 to \$30 for 600 pounds, or four to five cents per pound. This, with the cost of the apples (that will vary from three to ten cents per pound of dried fruit), gives us as the minimum cost of the production eight cents, and from that to fifteen cents per pound, or from \$42 to \$90 as the cost of 600 pounds of dried apple. This is within actual experience.

In many places hundreds of bushels of apples are wasted, or made into cider at low prices. Probably in such cases two or three neighbors might get a low cost apparatus, and by performing the labor themselves, could dispose of the better quality of their windfalls at prices more satisfactory than cider mill prices, and at the same time put on the market an article of food much superior to the old sun-dried apple; but anyone expecting to make \$15 profit on an outlay of \$25 will be doomed to disappointment. While any old room or shed may answer for a few weeks' operations, or the preparation of but a few pounds of apples, for the proper storing of the green fruit, packing and handling the dried product, disposing of the refuse, and warmth and shelter day and night for the help, a much more expensive structure will be required for permanent operations. Again, no one need expect to make a No. 1 article of dried apple, such as will sell readily and at a good price, unless he has had some experience, as a few pounds of imperfectly prepared or improperly dried fruit might spoil an entire batch, thus entailing loss and disappointment. With sufficient capital, well arranged buildings, the best machinery, and careful, intelligent supervision, the business of evaporating fruit (either co-operative or not) is profitable, one season with another, fairly profitable, while it enhances the value of a grade of apples hitherto nearly worthless.

The Colorado Spruce is *Picea pungens*. It is called "Colorado" blue spruce because the species is a native of the mountains there, and not because the trees are cultivated there for sale. Different trees are of different shades of green, varying from the plain green color to a light silvery or steel blue color. If you should raise them from seed, probably half of the seedlings would have bluish foliage, and five or ten per cent. of the seedlings would be of a handsome glaucous blue color. Nurserymen who raise these spruces from seed usually pick out the blue ones and sell them for handsome garden specimens, and the green or poorly glaucous ones are disposed of for hedges, shelter belts and forest planting.

In Keeping Celery for Winter Use always keep the tops dry, although

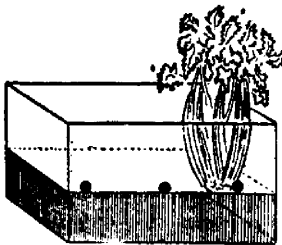


FIG. 392.

the roots should be kept moist. The cut given here-with shows a good way by which it may be done. Take an ordinary soap box, shoe box or any of sufficient size, and bore holes three or four inches from the bottom. Then fill in a shallow layer of soil or sand and put in the plants, placing them upright. The soil can be then kept damp by moistening through the holes in the side.

A LOW-PRICED EVAPORATOR.

WE so often receive inquiries from subscribers about evaporators, and so few apparently are in use in Ontario, that we took notes of the Improved Evaporator, on exhibition at the World's Fair, by D. Stutzman, of Ligonier, Indiana. It is to all appearance, simple, durable, and efficient. The largest size shown was the Farmers' Favorite, weight, 225 lbs., and capable of evaporating four or five bushels of apples per day.

It has twenty trays, 12 x 24 inches of surface each.

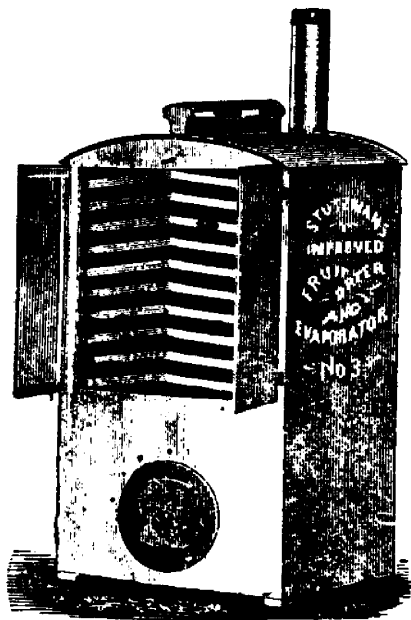


FIG. 383.—THE FARMERS' FAVORITE.

HOW TO SECURE YEARLY CROPS OF FRUIT.

President Barry, of the Western New York Horticultural Society, in reply to various questions says:

"I think that the cultivation and fertilizing of orchards, notwithstanding all that has been said and written about it, is not properly understood to-day. I believe firmly that if an orchard be thoroughly cultivated and well manured, and the fruit thinned, and this method put in practice every year, we can have a good crop of fruit. Those are the great secrets of fruit culture; you cannot put on too much manure nor keep the ground too thoroughly cultivated.

“Is there any method of pruning that will answer as a method of thinning the fruit? Proper pruning does thin the fruit; that is one of the ways of accomplishing thinning properly, by pruning, which should be attended to every year. An orchard that is not pruned in four or five years becomes so injured that it is almost impossible to get it into proper condition again.

“What has been your experience in sorting apples for market? That is another very important operation in fruit growing that does not receive the attention that it merits. The ordinary fruit grower is not particular enough in grading his fruit to get satisfactory returns from sales. Our practice is to sort out the very choicest fruit and put it up in small packages, and I believe this is the course to pursue, not only with pears but with apples.”

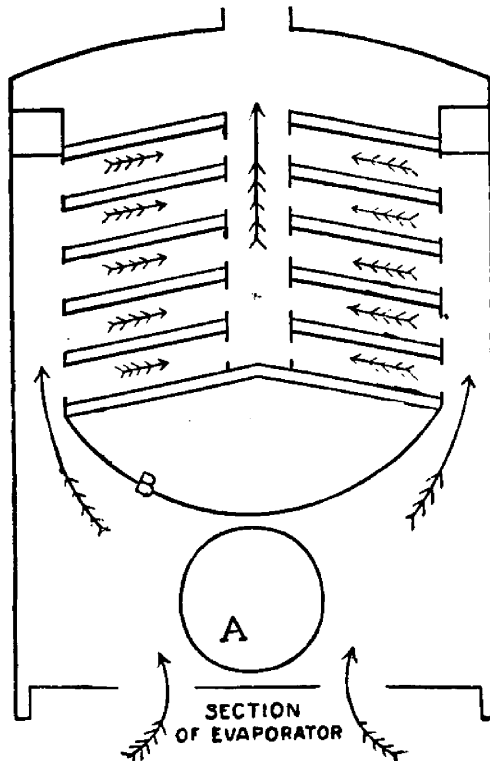


FIG. 384.—SECTION OF EVAPORATOR.

This cut shows the inside working of the Stutzman Fruit Evaporator. The two arrows below show the free access of dry air into the hot air chamber around the furnace A; heat divider B distributing heat equally to openings on either side, thence over trays as indicated by arrows, thence out at top. All the moisture arising from the fruit is carried off very rapidly by an unobstructed current of hot air passing over trays as indicated; leaving the fruit with all its original flavor and of a very bright color.

REQUISITIES FOR APPLES.



SUCCESS in orcharding has to do with varieties, treatment, and sale. Cast all personal preferences aside, and select such kinds as succeed in our respective localities. This is most important. We must know the prejudices of purchasers—whether red or white apples prove the most popular; whether the size shall be large, medium or small. The question of quality settles itself. It is a fine theory that would compel orchardists to become public instructors; but if high flavored, beautiful fruit cannot be raised at a profit, that of inferior quality will, and must, take its place. Another strong point is to be content with few varieties—the fewer the better. “Succession of kind” sounds plausible, as well as the assumption that when we have many varieties some one or more will surely produce a crop. That this is unsound reasoning many orchardists have learned to their sorrow. One thoroughly reliable variety is worth more than a hundred of doubtful character. With naturally good mellow soil, all needed preparation is to manure with no stinted hand, and then plough deep and thoroughly. It is of the utmost importance that the young orchard receive a good send-off; after that, if cultivated carefully for a few years, meanwhile cropping with vegetables, there will be no cessation of growth in the trees. This part of the programme is generally carried out, but, after cropping with vegetables ceases, how many people ever fertilize the soil, or care for the trees? More failures resulting from the cessation of surface culture and proper pruning, than from attacks of insects, which, under preventives and treatment of recent years, are not considered a serious obstacle. How to place one’s fruit properly on the market seems to the uninitiated a point of minor consequence, but when we perceive customers calling year after year for packages bearing the imprint of some noted orchardist, there must be a reason for it, and the solution is, that the fruit is carefully and evenly selected, preserved in first-class condition, and is, in short, just what the invoice calls for. Nearness to good market is an important factor in making apples pay; the nearer producer can get to consumer, and consequent reduced freight, the greater the margin of profit of course. Finally, much depends upon close application and earnest work. Under the impression that trees can care for themselves many young orchardists have utterly failed.—
Josiah Hoopes.

CLOVES are largely grown in Zanzibar. A tree ten years old often yields twenty pounds a year, while one of twenty years’ growth may yield one hundred pounds. The crop last year was not far from 13,000,000 pounds, and the average local value is about fivepence a pound.

THE RED SPIDER.

(*Tetranychus telarius*, Linn.)



PERHAPS there is no pest that does so much damage as the red mite, or, as it is improperly called, the "red spider." All florists have had it to deal with, especially those who grow roses. It is not only an enemy to the rose, but is equally destructive when it attacks any tender plant. It has been found upon the currant and gooseberry, where it did considerable damage to the foliage. It has also done harm to quince and plum trees.

The red mite, *Tetranychus telarius* (Fig. 385), has been found on a great variety of plants, and from its shape and habits it was supposed to be the same insect in every instance. This fact has been proved, as the rearing of these specimens has brought forth the same species. The mites vary much in color, from a greenish to a brick red. This great difference in color may depend upon the character of the material in the alimentary canal or upon the age of the insect, the older ones being of a brick-red color.

The "red spider" is very small, being only about one twenty-fourth of an inch long. The body is of an oval form. The legs are eight in number, in the mature mite, two pairs extending forward and two backward, the first pair being the longest (see Fig.) 385. The eyes, which are two in number, are very small, and can be seen only by means of a highly magnifying power. On the posterior portion of the body, and on the ventral side, is the spinning organ. From this habit of spinning a web, many people are led to believe this insect a spider, while in reality it belongs to the spinning mites. The mandibles, or jaws, are short, and are fitted for cutting. Just between the mandibles is a barbed sucking apparatus. With the jaws the mite tears away a portion of the leaf, and then inserting its sucking tube into the ruptured leaf, takes up the juices of the plant, and thus destroys the cells. This gives to the leaves "a yellowish or greyish appearance above, with some patches of a lighter shade, forming a kind of marbling." The edges of the leaves are rolled back on the under side, and the leaf beneath is whitish and shiny. The under-side of leaves having the above-mentioned appearance will be found literally covered with eggs and mites, in all stages of development and growth.

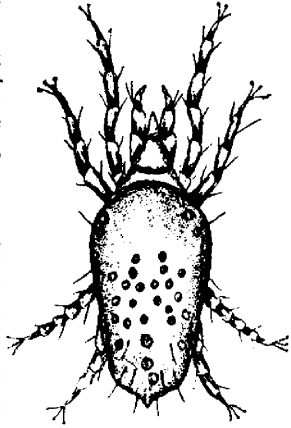


FIG. 385.

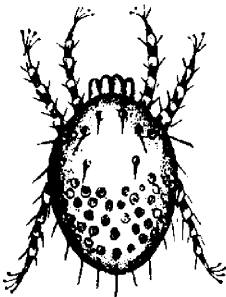


FIG. 386.

In the construction of the web the feet aid greatly, and by means of the hairs at the ends of the claws the web is

drawn out and attached. While spinning, the feet are very active, and the mite moves about freely, but if placed upon a smooth surface the movements are more sluggish, and are produced with greater labor.

The eggs of the "red spider" are spherical, and nearly colorless. Within less than two weeks the eggs hatch, and the young mites appear. They differ from the imago or mature mite in size, and by having three instead of four pairs of legs (Fig. 386). The young mites are of a clear, transparent color, and after shedding their skin for the last time, have eight legs.

In order for the red mite to thrive well, the atmosphere must necessarily be hot and dry. From this fact, one can readily destroy them by means of a thorough spraying with pure water.

During a very dry year at the Michigan Agricultural College, these mites were exceedingly thick on the evergreens, which they threatened to injure seriously. Spraying profusely with pure water seemed to be as effective to destroy them as did such insecticides as whale oil soap, kerosene emulsion, etc. Care should be taken, however, to make the application thorough, especially on the under side of the leaves, as it is here the mites congregate. Sulphur has been used extensively as a remedy for the "red spider." The sulphur should be mixed with quicklime and water; about one pound of sulphur and two of lime to four gallons of water. This will make a solution strong enough to destroy the pest in all its forms. If the heating pipes are painted with a mixture of sulphur and lime, the pest may be destroyed. This, however, can only be practised upon plants that are reared under glass.—Orchard and Garden.

MURIATE OF POTASH.

Manuring Peach Trees.—The experiments which were made a year or two ago in New Jersey gave interesting as well as varying results. Nitrate of soda at the usual rate of 150 pounds to the acre produced no results at all; superphosphate added about 30 per cent. with 350 pounds to the acre, but muriate of potash, above all the rest, with only 150 pounds doubled the crop. When these three fertilizers were applied together the product was more than doubled. Still above all these was the result of 20 two-horse loads of barn manure, yielding three times as much as the unmanured ground. The value of potash for peach trees is seen in the above mentioned increase with muriate of potash. The large quantity in bulk of the horse manure is sufficient to account for its effects. These experiments were performed in Somerset County near the centre of the State. In other localities and with unlike soils, the results in some instances might have been quite different.



CANADIAN WILDFLOWERS.—III.

The Buttercup Family—(Continued).

ANEMONE TRIBE—*Genus Hepatica*.



IS there any need to describe the hepaticas? They are so widely distributed, and open their pretty blossoms so early in the spring, that they are favorites with every woodland wanderer, known to some by the name of Liver-leaf, to some as Snow-flower, and to a few as Wind-flower, though the latter name is usually given to the anémone. Bryant alludes to it under the name Windflower, where he says :

“Lodged in sunny clefts,
Where the cold breeze comes not, blooms alone
The little Wind-flower, whose just opened eye
Is blue as the spring heaven it gazes at.”

Linnæus named it *Anemone hepatica*, but later botanists have followed the earlier name given by Dillenius. They also make two species of our hepaticas, giving to those plants in which the leaves are composed of three obtuse, or rounded lobes, the name of *Hepatica triloba* ; and to those in which the lobes instead of being rounded are acute, or pointed, the name *Hepatica acutiloba*. Beyond this difference in the form of the leaves there does not seem to be any permanent features to distinguish one from the other. In both of them the involucre leaves are placed so near to the flower that they might be easily mistaken for a calyx, and in those plants that have rounded lobes these leaves are rounded, while the acute lobed have the involucre leaves also acute. The flowers in both have no petals, but the sepals are colored, sometimes a pale purple, oftener a pure azure blue, “as the spring heaven it gazes at,” and sometimes pink, or white; they also vary in number from six to twelve. In some localities one will find only the round lobed variety ; again in others the acute lobed seems to be the only form. Both forms are to be found in the vicinity of Toronto ; the round lobed prevailing in the vicinity of Victoria Park, the acute lobed on the western slopes of the Don, and seems to be the ‘only form’ in the vicinity of Whitby. In both, the leaves are radical, that is, grow directly from the root, the flowers single, perfect but not complete, and borne on long peduncles, flower stalks, from hairy scapes. Both prefer partial shade, and a somewhat sandy loam.

They are both of easy culture in the garden if given a shady spot, either among shrubs or under trees, where the sunlight sifts down through the branches or where the shadow of fence or buildings will screen them from the hot rays of noontide sun. They will abundantly repay a little care in the giving them a yearly dressing of fresh leaf mould, or rotted turf, and in the autumn a light covering of fallen leaves, which may be allowed to remain. It is said that under generous treatment the flowers become sometimes double, though this has not occurred in the writer's experience; nevertheless a well-cared for bed of them, even if the flowers are all single, is a most beautiful and pleasing object in the early spring.

ANEMONE TRIBE—*Genus Thalictrum.*

THE RUE-ANEMONE, *Thalictrum anemonoides*, is the best of our species for the flower garden. It blooms at the same time as our wood anemone, described in the April number, page 140, and is often found associated with it. None of the species have any petals. In most of them the flowers are small, and the sepals fall early, but the sepals of this one are half an inch long, oval in form, numbering variously from five to ten, usually white, sometimes, though rarely, suffused with pink, and do not fall early. The radical leaves are compound, composed of three leaflets that are three lobed at the end and heart-shaped at the base. The stem leaves are in the form of an involucre at the top. Occasionally the sepals are three-lobed like the leaflets. It is quite common in the woods, its distribution extending from Canada to North Carolina, and it is a pleasing flower in the garden as a companion with other early spring flowering plants.

Our remaining species are none of them particularly desirable for the flower garden. The following are found in Canada, and will be interesting to the botanist or student making a collection of Canadian plants:

EARLY MEADOW-RUE, *T. dioicum*, is common from Gaspé to the Pacific, and as far north as latitude 67°. It grows from one to two feet high, and blooms in April or May, varying as to date according to the locality. The flowers are purplish and greenish.

PURPLISH MEADOW-RUE, *T. purpurescens*, grows to the height of two to four feet; is found on dry uplands and rocky hills, and is mentioned as growing near Belleville and London, Ont. Blooms in May or June.

TALL MEADOW-RUE, *T. cornuti*, is found growing around springs and small streams, and in wet meadows. It varies in height from four to eight feet, and is quite common from Nova Scotia and New Brunswick to the Pacific. May be found in bloom from July to September. Flowers white.

CROWFOOT OR BUTTERCUP TRIBE—*Genus Ranunculus.*

There is at least a dozen species of this genus growing in Canada. Two of them are aquatic, and unless one has a pond in which to grow them, they cannot be used as ornamental plants.

THE COMMON WHITE WATER-CROWFOOT, *R. aquatilis*, is found in slow-flowing waters; in bloom from June to August.

THE YELLOW WATER-CROWFOOT, *R. multifidus*, is in flower from May to July, the flowers from half an inch to an inch in diameter, and of a deep, bright yellow color.

The first two of the following varieties are suitable for the flower garden. The one called

RANUNCULUS RHOMBOIDEUS is very abundant in the sandy soil about Toronto Junction, blooming in April or May. It is of very dwarf habit, not more than from three to six inches high. The root leaves are roundish ovate, the upper stem leaves three to five parted, and the whole plant thickly set with soft hairs. The flowers are of a rich, bright yellow, about an inch in diameter. It takes very kindly to cultivation, increasing in size and beauty. The petals are five in number, and the sepals the same.

THE EARLY CROWFOOT, *R. fascicularis*, is also a low-growing, pubescent plant, about nine inches high, but the root-leaves have a pinnate appearance. Its flowers are also yellow, about an inch broad; petals often six or seven in number. It is usually found blooming in May, but this season it was most abundant about Toronto in the early days of June. Both of these varieties take kindly to the garden.

THE SMALL-FLOWERED CROWFOOT, *R. abortivus*, is very smooth, the lower root-leaves round, heart shaped, the upper ones frequently three-lobed, and the pale yellow petals shorter than the reflexed calyx. It is quite common on shady hillsides, and along brooks, growing from six inches to two feet high, but the flowers are too small for ornamental purposes. So also the following varieties are not ornamental, namely:

THE CURSED CROWFOOT, *R. sceleratus*; smooth, root-leaves three lobed, petals scarcely longer than the calyx; pale yellow. Grows in wet ditches and blooms from June to August.

THE HOOKED CROWFOOT, *R. recurvatus*; hairy, leaves of the root and stem deeply three-cleft and borne on long leaf-stalks. The petals are shorter than the calyx, which is reflexed. Common in the woods in May or June.

THE BRISTLY CROWFOOT, *R. Pennsylvanicus*, is hirsute, the leaves divided, and the divisions unequally three-cleft. It grows in wet places from two to three feet high, but the flowers are insignificant.

There seems to be some doubt whether the

CREeping CROWFOOT, *R. repens*, of Linnæus, is found in Ontario, though mentioned by both Logie and Billings. It grows in moist and shady places and wet meadows; its flowers are an inch broad, and to be found from May to August.

The three named below grow in wet places, such as the shores of lakes and inundated banks:

WATER PLANTAIN SPEARWORT, *R. alismæfolius*, is from one to two feet high, sometimes rooting from the lower joints; flowers bright yellow, but small, the petals being only about one quarter of an inch long, appearing from June to August.

SMALLER SPEARWORT, *R. flammula*, has also very small yellow flowers; and the variety *reptans*, known as the CREEPING SPEARWORT, its threadlike, creeping stems rooting at all the joints; may be found in bloom from June to September.

450 Markham St., Toronto.

D. W. BEADLE.

MAKE THE ORCHARD PAY.



IF orchardists want the greatest returns from their trees they must be prepared to dispose of their products in the most economical and profitable way. I have found that to evaporate second quality apples is a good plan, but the expense depended greatly on the condition of the fruit, whether it be badly bruised and soft, or not. The fruit that I evaporate is nearly all from grafted trees and averages six pounds per bushel. The average natural fruit will make about four pounds per bushel. Baldwins and Greenings six to seven, Russets eight.

My average expense for evaporating and boxing has been three and a half cents per pound, or at the rate of twenty cents per bushel. About ten cents is the average price at wholesale for evaporated apples. I use an American evaporator, that is intended for bleaching apples, but it is not desirable. The dry fruit should be bleached from five to eight minutes in a separate place, and as soon as it is cut and spread on the trays it should go thence directly to the evaporator. There will be thus no complaint of smell or taste of sulphur in the apples. Another fault that I found with my evaporator was that it was built to take the apples into the top and deliver them next the furnace. In this way it is impossible to keep the desired amount of heat without scorching the apples. I improved this by entering the apples over the furnace and taking them out dry at the upper end. Steam heat in pipes would be much more economical than furnace heat.

Expenses for making this crop salable, doubtless vary in different localities. My apples are cut and placed on trays by women at sixty cents per day. A man is employed to attend the evaporator, and he is paid one dollar. Six hands dry, on an average, 150 pounds per day. One must not expect to get rich, drying apples. The fuel costs me three dollars per cord. When one has a quantity of apples hardly fit for market, he can get a fair profit by drying them. I consider it safe to dry all not worth a dollar per barrel at the door without the barrels. The fruit is sometimes quite scabby, and when it is so afflicted it seldom pays to pack it for market. I put such fruit through my evaporator and en it pays.—P. Whittier, in Alleghany Gazette.

FRUIT SPURS AND FRUIT TREES.



Do you know that fruit spurs are short twigs growing on the sides of limbs or branches of fruit trees. They are not sprouts nor branches, nor limbs. They consist simply of spurs, from one to several inches in length, terminating with one or many fruit buds. When they are not broken, or pruned off, these spurs appear on the bodies of every limb and branch of a fruit tree. Dame Nature is an expert pomologist, hence she covers every limb of a tree with fruit spurs. There is a scientific reason for producing fruit spurs, and there are also plausible reasons why they should not be broken off. Dame Nature produces them so that the leaves on them may shade the bare surface of limbs, and thus protect the sap and cambium from being scalded and baked by the intense heat of a summer sun. I have often observed the upper side of large limbs, from which all these spurs had been broken off, that were as dry and dead as if the surface had been scorched by a fire. The burning sun caused this damage. All the fruit spurs had been sawed, or cut or jammed off by the feet of those who were climbing in the tree top.

Dame Nature produces these short spurs for an important purpose—namely, to bear fruit. In this scientific arrangement we perceive wonderful wisdom. When there are several apples or pears on a spur they will be less liable to be blown off by high winds than if they were hanging to the end of a limb or long twig. When most of a crop hangs at the ends of long and slender branches, a large portion will be jerked off by the rapid and continuous swaying of the branches during driving storms and tempestuous winds. Now then, we have a few important facts for the consideration of every person who owns only one fruit tree. There is no doubtful speculation about them. They are bed-rock facts which cannot be controverted. I have been familiar with them from early boyhood. Whenever I have pruned fruit trees, my invariable practice has been to spare the fruit spurs. Instead of sawing or cutting them all off one limb, I always leave enough to shade every branch, if possible, from the body of the tree to the extremities of the limbs. When climbing about in a tree top, I always spare the fruit spurs as much as possible. When plucking fruit, instead of pulling them off, fruit and all, and then separating the fruit from the spurs and throwing the latter to the ground, I always separate the fruit from the spurs with care, so as to avoid all injury or damage to the buds on the spurs. These buds are the embryo of the fruit for the next year. If the buds are broken off the tree will yield no fruit the next season. Every spur that is broken off this year lessens or damages the crop for next season. Cherry trees are frequently badly damaged by clawing off these fruit spurs, fruit and all, and thus throwing the crop for the next year to the ground. I have often seen the ground literally covered with

them, which had been broken off when the thoughtless were gathering the ripe fruit. When I pick cherries or plums, instead of hauling off a handful of fruit with the spurs, I take hold of the stems and thrust the thumb nail against the base of the stem so as to separate them from the fruit spurs without damaging next year's crop of fruit. Very few people ever think of this. The consequence is, many fruit trees have long bare limbs on which there is not a fruit spur for ten or more lineal feet ; whereas every naked branch should be covered with fruit spurs to shade the new bark in hot weather and to produce fruit. When children and thoughtless adults are plucking fruit they should be instructed repeatedly to spare the fruit spurs, and the matter should be explained to them often so that they will thoroughly understand that if they persist in hauling off the spurs they will damage the crop of fruit for the next season. Immediately after cherries are gathered, Dame Nature concentrates all the energies of the growing tree to develop the fruit buds, preparatory to the next crop of cherries. Every fruit spur thrown to the ground this year represents a cluster of cherries destroyed of next year's crop.—S. E. TODD, in Horticultural Times.

THE CULTURE OF HARDY BULBS.

The Best Time to Plant.—Any time between now and November will do, but bear it in mind that the bulbs will be better if put into the ground now than they will be if left in the seedman's store for another month or two. And the prices don't get any less, no matter how long you delay buying, but the longer you put off getting the bulbs, the less likely you are of getting a good selection of good bulbs.

What to Plant.—This will depend on what you want them for. If for beds then tulips, hyacinths, crocuses and Siberian squills ; the first two to fill the centre of the beds and the last two for use as edgings.

If you want them to set out in your borders to give you a variety and display of spring flowers, then get hyacinths, tulips, daffodils, Poet's narcissus, Crown Imperials, Guinea-hen flowers, crocuses, snowdrops, Siberian squills, Spanish squills, European blue bells, Grape and feather hyacinths, and the like. And this is a most enjoyable way of using them ; you can plant them most any where, and in summer after they have bloomed and died down you may let other plants spread over them without hurting them. In the case of crocuses and snowdrops they seem most at home when spread broadcast in the grass or skirting the bushes. But in thus naturalizing them plant them in good, moderately moist ground only, and instead of spreading them thinly all over the grass, keep them together, quite thickly in the main patch and more thinly towards the outer edges. And don't mix up a lot of things, as crocuses, snowdrops and Siberian squills together ; keep each in a colony by itself.—Popular Gardening.

POINTS OF MERIT IN TOMATOES.



THIS is the queen of vegetables, and one in which there is as wide a difference between the good and the bad as between a "frost" pear of the hedge-row and a well-grown Seckel. The ideal tomato may vary somewhat in shape, but, whatever that may be, there should be no deep corrugations or seams, the fruit being nearly smooth, although a slight depression along the line of natural division is not objectionable. The stem should always be relatively small, and set in a very shallow basin. When it is large and set deeply into the fruit it is accompanied by a pithy core extending into the fruit, and ruining it for slicing or for canning. The stem end of the fruit should be nearly flat or slightly rounded. When there are any marked projections here they will be sure to be imperfectly ripened at the time the rest of the fruit is in the best condition. As to color, tastes differ; but I have never yet found a tomato of the purple tint of the old Fiji, which was not of a sharp, hard, metallic-like acid, very much less pleasant than the mild, fruit-like acid of the true red or scarlet tomato; and I am quite certain that, were we to select ten of the best varieties, quality to rule, eight at least—and, I believe more likely nine or all of them—would be found to be clear, bright red, with little trace of purple.

Of the interior of the fruit, the general opinion as to what constitutes merit is certainly at fault. Most people only ask for a solid, seedless, pulpless flesh. Fortunately, the fruit is too good to develop any such worthless variety as is thus called for. If you carefully examine a tomato you will find that the greatest amount, and by far the finest flavor, is found in the pulp surrounding the seed, and that the flesh surrounding the fruit next to the skin is quite different, and greatly superior, to that in the interior divisions, which many people value as making a solid fruit. Often these interior divisions are made up of perfectly flavorless, hard, but corky tissue. This is the case in an exceedingly large fruited sort which I have grown several years for comparison, but have not considered worthy of a name or of general cultivation, although I am certain that this variety can be made to produce the largest fruit having the smallest proportionate weight of seed and the largest proportion of dry matter of any of the hundreds of sorts I have tried; and yet I have seen the Mikado recommended as the best variety, because it stood first of any the writer had tested in these respects. My ideal tomato, as far as interior is concerned, is one in which the outer circle of flesh next to the skin is very thick, the thicker the better; the interior divisions few, and, consequently, comparatively large, and each completely filled with pulp. Seeds are of themselves a disadvantage, but as we never have pulp except surrounding seeds, we shall have to have a fair quantity of them in order to get the

desired pulp. This pulp should be as thick as possible. We sometimes find fruit in which it is very thin, and in such cases it is usually quite acid. The pulp should be as thick or solid as may be, while the flesh, both of the outer circle and of the inner division, should be as soft and juicy as possible, thus making the fruit as nearly uniform in consistency as it can be made to grow. I would be as critical as to the flavor of the fruit as of that of a pear or apple, and insist that, to be good, a tomato must have a distinct fruit-like sub-acid flavor. Lastly, the entire interior, except the seeds, should be in color as nearly like the deep, rich red of the outside as possible, making a fruit which is a delight both in color and flavor.—PROFESSOR W. W. TRACY, before the Michigan Horticultural Society.

Making Cherries Profitable.—The cherry tree needs a dry, but rich, deep soil, with enough potash in it to supply its enormous demands for this mineral in producing its crop of seeds. The cherry itself is mainly water, but if the stone cannot be perfected the cherry is apt to rot, especially if a few days of wet weather occur about the time it should ripen. But to make cherries pay it is not enough to grow them. A large amount of cheap help must be had, women and children working at this, and earning more than they could at any other work. Then there must be a nearness either to a canning factory or to a station where the fruit may be shipped. The fruit must be picked dry, not wet, with either rains or dew, and with stems on. All imperfect fruit or that which has been torn or cut in gathering must be kept out. It is better to be fully ripe, rather than under ripe. Cherries do not ripen up off the tree as will many other fruits. A fully ripe cherry will bear transportation longer than one not ripe. Where conditions are favorable the cherry crop always pays a fair price, and occasionally in seasons of scarcity it gives more profit per acre than almost any other.—American Cultivator.

Care of the Orchard.—No one should set out a new orchard unless he is sure he can give it both manure and mellow cultivation. A small one of a few acres, bearing yearly rich and beautiful specimens, is better than a neglected one spreading over wide acres. There will be more profit in the small and perfect one than in the one extended and neglected. Until planters who have the means avoid this superficial practice, they will continue to set the unwholesome example to others, and perpetuate to a great degree the slipshod style of orcharding. It is well, therefore, for the planter to determine beforehand what special attention can be given to the trees, and fix on the size of the orchard accordingly. Cultivation alone, keeping the soil clean and mellow for several years, may answer while the trees are young; but when they come into heavy bearing, this large annual draft can be supplied by an annual or at least biennial top-dressing in the autumn or winter, of rich barn manure.—Country Gentleman.

THE BOSC PEAR.



WANT to say "Amen" to the hearty recommendation The Rural has given to the Beurré Bosc pear. Downing gave it "unqualified praise" many years ago, and all he said of it then has been literally true ever since. The American Pomological Society has continued to shower "stars" upon it in 25 States and provinces, and yet The Rural's question, "Is this delightful pear known to all of our readers who raise pears?" is a pertinent one. My own observation answers, "No." There are hundreds of orchards in New York State alone where the variety cannot be found, and many of the growers do not seem to even know of its existence.

The Bosc (as it is now properly called) is a Belgian pear, having originated with Van Mons in 1807. It is most distinct in character, being wholly unlike any other of the pear family. In shape and size it is without a rival. Its handsome pyriform always seems like an ideal pear to me, and it is uniformly large, smooth and regular. Compared with Downing's outline, my fruit is always broader at the base. An obovate, elongated pyriform would perhaps describe the shape better than nearly "pyriform," which is at best an ambiguous term in the absence of any typical pear form. I think on the whole Downing's outline is slightly inaccurate in the respect indicated as applied to the Bosc as generally grown in America. The quality is indeed delicious and excellent as described. The cinnamon-russet exterior is without knots, and covers the firm, rich, melting, perfumed flesh inside. The fruit keeps well and is devoid of any strong peculiarity in flavor requiring an education of the palate to appreciate. The tree is healthy and productive, though not a very early bearer with me. The wood is strong and handsome, and the habit of the tree excellent. It does, however, grow in clusters to some extent on my trees, often two or three together, as I find now on some grafts I have, and then the three long specimens are beautiful indeed. Another valuable feature of the Bosc is it does not scab, crack or mildew. This season it is growing in my garden grafted on Flemish Beauty stock with the cracked and scabby "Beautys," hanging around it, but the Bosc are all without a blemish. Why yes, everybody ought to plant the Bosc. It has not the flavoring and deceptive cheek of the Clairgeau, but it has positive merit and is one of the best of all pears.—H. H., in R. N. Y.

"Apple Trees do not require the constant nursing and coddling that orange trees must have to secure good crops. We have to grub the soil two or three times during the summer to keep down weeds; we have to sprinkle the foliage to kill insects, and we have to scrape and wash the trunk and twigs for the same object. We manure once or twice a year, and then we have frosts to contend with, and our fruit goes a long way to find a market." And this is the story many orange growers tell. Apple culture in New England promises quite as well to those who will learn the requisites to success as orange growing in Florida or elsewhere.—New England Farmer.

PACKING PEARS.

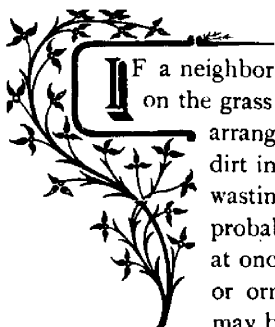


IN a paper on Pears, read by J. J. Black before the Peninsular (Del.) Horticultural Society, the essayist said: "We believe that pears should be packed in new bright packages, half barrels, quarter barrels, boxes, crates, down to very small packages. We must take lessons from the California growers. The day has gone by when we can shovel fruit of any kind into five-eighths baskets with a corn shovel and then expect the business to pay. In an average season it would be better that never a pear in the nature of a cull went to market. Feed such to hogs and you save freight and then commission, and avoid breaking down the market for good fruit. If a glut comes keep even your primes at home. It is suicidal to break the market; or avoid it any risk.

"Devote time to the marketing of pears. Wrap each pear in tissue paper and pack in layer boxes. Then you won't bother with your inferior specimens. you will please the eye of the dealer and consumer and never overstock the market. Why is California fruit looked upon as choice in the market? We all know it is not from its flavor. The fruit of the Delaware and Chesapeake peninsula probably excels in flavor the fruit of any other part of the world, and this advantage should work a fortune to our growers. The California fruit is looked upon in the market as choice simply because the specimens are all choice specimens, wrapped in tissue paper and packed in layer boxes generally, and is pleasing to every sense except taste. Peninsula fruit is pleasing to all our senses, provided we handle it carefully. This proper handling means the discarding in seasons of scarcity of probably one-fifth of the crop, and in seasons of plenty one-third should go to the hogs. Such a course, honestly carried out by the growers will rehabilitate our fruit business; indeed, at present it is one of the great things lacking to general prosperity."

Be Not Afraid to Thin.—The fruits especially benefited by thinning are the plum, apple, pear, grape and peach. The amount of thinning required is a matter of judgment in each case. The best time to thin fruits is as early as the work can be done with ease and satisfaction. In thinning grapes it is usual to cut out a portion of the bunches; but those who raise Black Hamburgs or other hothouse grapes are in the habit of cutting out about half the berries from each bunch when they are about the size of peas, using sharp-pointed scissors for the work. After such thinning the grapes grow very large, and present a very attractive appearance in the bunch. It is in this way that the wonderful fruit exhibited at our horticultural shows is grown. It is not customary to thin small-fruits, though there is reason to believe that they would be better for it; but it is not likely that it would pay, unless for specimens for competition at the horticultural shows.—Mass. Ploughman.

ROCKERIES.



IF a neighbor should dump, without orders, a pile of stones and dirt on the grass in your front lawn, you would be offended; if he should arrange these rocks in a circular well-like mound with the dirt in the centre, you would wonder at his stupidity in thus wasting his time. Under such circumstances, you would probably consider the affair a blemish, and order its removal at once. Are the rockeries we ordinarily see any more useful or ornamental than what has just been described? They may be small and of common stones, or they may be large with many curious stones, and they may have some plants, but, if so, they are such wretched dried-up, burned-out, starved specimens that one only approaches them as they would a half-famished and ragged child of the city—out of pity and curiosity, not to admire. The same plants may be thriving in other parts of the grounds, and with the exception of the rockery the whole place may be in an attractive and thriving condition. You may say that these are misplaced and poorly constructed examples, and this may be true; but it is also true that the best constructed and most carefully cared-for rockeries, in all kinds of soil, do not begin to be as attractive as those that are seen, and that we read about, in European gardens. You will surmise that there is something in our climate responsible for this. If you compare the meagre flora, of a distinctly Alpine character, of the White Mountains of New Hampshire, with the extremely rich and varied flora of the Swiss Alps, you will have striking evidence of this.

In England, owing to the great amount of moisture, delicate rock plants can not be grown successfully in the open border, so the rockery is provided to give suitable conditions as regards drainage, exposure, etc. A large number of these same plants can be grown, with little trouble, in a well-drained open border here, and the only advantage that rocks can give is to raise them a little above the surface to make the drainage more perfect. In a rockery they would be burned and dried out in summer, or thrown, or frozen, out in winter.

It is hardly advisable to construct a rockery in any case merely for the sake of having one; the only reason for it would be that there was a spot on the grounds on which the conditions were favorable, that could not be used to advantage for anything else—like a steep, moist, rocky slope, a broken ledge, or a worked-out bit of quarry, or a cool, shady glen in the woods.

A rockery never should be placed in the centre of the lawn, and seldom where it is fully exposed to view across the lawn from important windows of the house. In the construction of a rockery, the most favorable conditions should be provided for the growth of the plants to be used in it. Good deep pockets of soil should be made, and advantage should be taken of any naturally moist

spot, or water should be provided. A variety of exposures should be secured, as well as soils. Of course, if it is intended to display a lot of curious rocks, soil will not be required, for such a display can be made to better advantage without plants to interfere.

In planting a rockery the greatest care should be taken not to introduce very weedy plants with underground stems, for if such a plant once gets a foothold the chances are that the rockery will have to be pulled down to exterminate them. Probably ferns, as a class, are better adapted to a rockery in shade than any other; but in a more open situation such plants as the following will be found to succeed without being too weedy:

Phlox subulata and vars. *P. stellaria* *P. amoena*, *achillea tomentosa*, *athionema grandiflorum*, *alyssum saxatile*, *Arabis albida*, *armerias*, *asperula*, *campanula carpathica*, *cerastiums*, *dianthus*, *erysimum pulchellum*, *geraniums*, *gypsophilla repens*, *iberis*, *lotus corniculatus*, *myosotis*, *papaver alpinum*, *sedums*, *sempervivums*, *silene*, *stellaria*, *thymus*, *tiarella*, *tunica*, *veronica rupestris*. *V. amethystina*, *vinca minor*, *violas*.

Of shrubs the following are excellent:

Daphne oneorum, *juniperus procumbens*, *cytissus purpureus*, *berberis thunbergii*, *lonicera Albertii*.

It is probable that in this list are some kinds not hardy in Canada, and this should be kept in mind in selecting from it.

Brookline, Mass.

WARREN H. MANNING.

THE PURPLE BEECH.

All thoughtful planters know that the Copper beech is one of the principal pigments upon the landscape gardener's palette, with which to paint the landscape, and as artists are always careful in the use of their high colors, so, in like manner, does a judicious planter take care how he distributes his few precious high tones which are so important and telling in true ornamental planting, and so productive of bad results if thoughtlessly planted.

The grouping of Copper beeches with other trees requires much thought to do it well. Sometimes one sees happy combinations result from hap hazard planting, but it is always best to well consider where to place such important trees. There can be no rule, but there is a principle to act on. A Copper beech never produces the best effect if any heavy green tree is close to it, neither must it jar with a tree of similar color, like that of the Purple sycamore, or Purple birch, though a group of Silver birches could not have a finer setting than the Copper beech. It never looks well if planted out in the open, where its full outline can be seen against the horizon. I should always seek for it a background of larger trees.—Vick's Magazine.

NOTES ON SOME GOOD RUSSIAN APPLES.

The Arabka—Here is another "family" of Russian apples, the so-called Arab family, variously named "Arab," "Arabian," "Arabskœ" and "Arabka." The one of these introduced some years ago by the nursery firm of Ellwanger & Barry, of Rochester, N. Y., has been approved by them, and is really in some respects quite a remarkable apple. As shown at the meeting of the Montreal Horticultural Society, in January, by Mr. Chas. Gibb, the Arabka is a large, dark red fruit, near the size of Alexander, but less even in form, being roundish, a little flattened, and somewhat "probulgent," or irregular. The tree is very vigorous, and an early and profuse bearer; the fruit is fair and even in size, a good keeper until midwinter, in Canada. Mr. Gibbs' trees, four or five years set, gave him nearly a barrel each. The flesh of this apple is coarse and not above the culinary grade, but its showiness and productiveness will make it quite as profitable to grow as Alexander, at least. In some respects it is preferable, as it is a better keeper, and apparently far less frequently injured by the codlin worm.

The Switzer.—The Switzer apple, one of the "Government Russians," imported by the United States Department of Agriculture in 1869-70, shows itself a thoroughly iron-clad and a remarkably fine grower, both in nursery and orchard. It is a large and handsome red apple, and the tree is a heavy bearer. On a light soil, it drops a good deal of its fruit in the course of the season, but carries a fair crop to maturity. Grown in Northern Vermont and Quebec, it keeps until the holidays, or later. At the last winter fruit meeting of the Montreal Horticultural Society, Mr. Charles Gibb said of the Switzer, "It is not an acid apple; it has no weak points about it, and it has the special merit that it is not quickly perishable. It is of good, fair, even size. It has what is called 'reINETTE' flavor." Mr. R. W. Shepherd, Jr., said, "I agree with Mr. Gibb. The Switzer is in quality much more like Fameuse than any Russian I have ever tasted." To compare any apple to Fameuse is a rare compliment from a Canadian. The Switzer is much larger than Fameuse, and entirely free from that apple's chief fault, spotting.

The Antonovka.—In the Antonovka (or Antony) apple from Russia, we plainly have a valuable and serviceable fruit, though not so long a keeper as was hoped. This variety is a true ironclad and a free grower in the nursery, forming a neat, upright tree, that in tree-agent language will "deliver well." It is easily transplanted, grows off freely, even in moderately fertile soil, and requires but little pruning; in all these points resembling the popular

Oldenburg. It comes to bearing quite soon enough, though it does not fruit in the nursery, like Wealthy and Yellow Transparent. Young trees, four years set, usually begin to show some fruit, and they are well loaded by the sixth season. The apple resembles Grimes' Golden, though with a slightly coarser appearance, and a little roughness of skin. In size it is a full medium. The form is ovate. As to its quality, it is a very good eating apple—not particularly fine flavored nor the reverse, moderately soft fleshed and palatable, but not very juicy. It is plainly a good shipping apple, and will sell as well as any yellow apple of its season, which is about that of Fameuse, or a little later. This is what Prof. Budd calls the "King Apple of the Steppes," in allusion to its abundance and popularity in Central and Eastern Russia.

The Longfield.—Though rather disappointed in the size of Longfield, I am very well satisfied with its quality, which, without any resemblance, is quite as good as that of Fameuse, while the tree is much hardier, and an even earlier and freer producer. The fruit on my trees is just about the size of Fameuse, but more conical, with a greenish white skin, and a blushed cheek,—a pretty little apple that is even better than it looks. It is possible that high culture, or increased age of tree, will give us larger fruit, such as I have had specimens of from the West. The Longfield, like the Yellow Transparent, seems to belong to a family having very close resemblances. English Pippin is much like it, but rather handsomer, the red cheek being brighter, but the quality is hardly distinguishable, nor does the fruit keep better. Good Peasant is another close cousin, which has not yet fruited with me, but which I am told, while otherwise much the same, is by several weeks a better keeper. The tree is a good grower, but rather irregular, with slightly deflexed branches, growing closely, and needing care in forming a head. With this, they make a good nursery tree, which bears young and profusely. Season about with Fameuse, or somewhat later.

THERE will be no difficulty in telling when the pods of the radish are in proper condition to remove; this will be known by their yellowish and ripe appearance. Do not wait for them to burst open but gather them carefully and lay them away in the shade in a ventilated room to dry.

PANSIES to bloom well require a low temperature, and the greatest difficulty in blooming the plants in the house would be the warm dry air. If the plants could have a cool room there should be no trouble in blooming them.

GIVE the young folks a share of the products for their very own, and it will go a long way toward solving the vexed question with some as to how to keep them on the farm when grown up and ready to go out and do for themselves.—
E. W. MARLATT.



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.

NOVA SCOTIA APPLES.—The probabilities of the fruit crop of *Annapolis* and *Round Hill* are as follows:—Nonpareil, 75 per cent. of a full crop; Baldwin, 50; Gravensteins, 100; Kings, 100; Greening, 100; Ribston Pippin, 80. *Paradise*.—Nonpareil, 50 per cent.; Ribston, 60; Baldwin, 90; Bishop Pippin, 115. *Lower Horton*.—Cherries 100 per cent.; plums, 65; apples, 75. *Cornwallis*.—Gravensteins, 90 per cent.

THE LUBSK QUEEN.—Mr. Hoxie, Secretary of the Wisconsin Horticultural Society, has returned to his post as Supt. of the exhibit for that State. He shows a large number of fine Russian varieties, prominent among which thus far is the Lubsk Queen—a perfectly beautiful apple—even prettier than Red Astracan, and of better quality, though not quite so large. He believes this apple will be very profitable.

THAT EACH VARIETY OF APPLE HAS ITS HOME seems well proved by this World's Fair; and in its proper habitat it is *the* apple to grow. Thus the Baldwin of Maine and the Northern Spy of Canada, are famous apples, while in Illinois these apples are poor, and little grown. Here and in Idaho and Missouri the Ben Davis is at home, and grows to a large size, and takes on a fine color. The Ben Davis is the great market variety for export from these States.

THE VARIATIONS in the same varieties grown under different conditions of soil and climate, are wonderful. The Newton Pippin of New York State, for example, is scarcely recognizable as grown in the State of Iowa, where the slight

irregularities about the calyx are prolonged into great humps. These lines of study can nowhere be pursued with the same success as here, where the fruits of the whole continent are placed side by side. The Red Gravenstein, a variation from the Gravenstein, but prettier, and well suited for dessert, is an apple of great promise, sent forward by the Nova Scotia Fruit Growers' Association.

DUCHESS APPLES have come to hand from British Columbia. They are large, clean and good, though not yet very high colored. The same variety has come from Quebec, and in addition the Blushed Calville, the Montreal Peach, Alexander, St. Lawrence, Winter St. Lawrence, etc. There are also immense Alexanders and Gravensteins from the famous Annapolis Valley, Nova Scotia, which attract much attention. The Province of Ontario has had quite a variety of fresh fruits daily for a month past, and the high standing of this banner province among the exhibiting States is well assured.

TWO GENTLEMEN FROM ITALY called at the Canadian Horticultural Court on the 5th of September, viz., Chevalier Celso Capacci, Royal Italian Commissioner from Florence, and Baron Giovanni de Riseis, from Naples. An arrangement was made for the exchange of reports of the Tuscan Society of Horticulture, for those of the Fruit Growers' Association of Canada. These gentlemen are very intelligent and highly educated. They are large land owners in Italy, the latter in the classic lands of Horace, Calabria and Apulia, where, he says, not only grapes and peaches, but apples also are grown with success. Fruit culture is rapidly extending in that country.

EXPERIMENT STATION.—We have a kind letter from Mr. W. C. Archibald, Earnscliffe Gardens, N. S., in which he describes the vigorous effort being put forth by the Nova Scotia Fruit Growers' Association for the establishment of a fruit experiment station in that province, in connection with a school of horticulture. A promise was made them by the Provincial Government of \$50 for each student, to the maximum of \$2,000, and the intention is to ask the Dominion for assistance toward the conducting of the experimental work. He proposes that the Ontario Association act in concert with the Nova Scotians, in seeking for the extension of experimental horticulture in both provinces at the same time.

A WORLD'S HORTICULTURAL SOCIETY has been formed by the world's representatives at the World's Fair. Mr. P. S. Berckmans of Florida was chosen President, and Mr. Geo. Nicholson of London, Secretary. In addition there is to be a Vice-President and Secretary for each country represented. The chief object will be the interchange of information between the various countries of the world. This Society has official correspondents in every country, and will form a most reliable bureau of information.

It is also proposed to publish a periodical, free to all members, giving the names of all the officers in each country, and such other information as is considered of general interest.

There were present such men as Prof. Bailey, of Cornell University ; Chief Samuels, of Kentucky ; Pres. Berckmans, of Florida ; Geo. W. Campbell, of Ohio ; A. G. Asdikian, of the Imperial Ottoman Commission ; Romulo Escobar, Commissioner from Mexico ; A. B. King, Liberian Commissioner from West Coast of Africa ; T. Minami, Professor of Agriculture, Imperial Agricultural College, Hokkaido, Japan ; Ernest Krelage, of Holland ; Henry Vilmorin, of France ; and numerous others.

SEPTEMBER 28TH.

THE GREAT FRUIT EXHIBIT of the season, at the World's Fair, will be during the month of October. In a few days Mr. Bigelow, the President of the Nova Scotia Fruit Growers' Association, is expected with a large collection of apples from the Annapolis Valley ; the Hon. John McIntosh, Commissioner for Quebec, has made arrangements for a very large assortment of fine apples from that Province, some of which are already on the tables, while Mr. Pettit, the indefatigable Superintendent of the Ontario exhibit, is surpassing all others in extent and variety of collection.

IF A CONTEST were permitted for the first prize in apples for color and quality, surely Canada would win it. We have been giving samples of Canadian Fameuse apples to Americans and Europeans, in such cases as it seemed desirable, and comments were so highly flattering, and so honest, as to afford much gratification. "The best eating apple we ever tasted." "Delicious." "Better than any apple grown in the United States," and other similar statements were freely made. This giving of samples to interested persons for tasting is one of the best plans yet adopted ; it makes a better impression than simply the sense of sight, besides affording a fine opportunity to talk about one's country.

A PLEASANT RIVALRY over the biggest apple has caused considerable excitement of late. Arkansas boasted she had the biggest apple at the World's Fair ; but British Columbia soon came along with one bigger. It measured $15\frac{1}{4}$ inches in circumference and weighed $24\frac{1}{4}$ ounces. But she was only permitted to lead the world a short time, for Idaho soon won the championship with one 25 inches in circumference. Will British Columbia, not try once more to regain her lost laurels ?

THE WINTER MEETING of our Association will probably open in the City Hall, Peterboro', on Tuesday the 12th of December. We shall be pleased to receive suggestions of topics to be discussed, or questions to be answered.

⇒ Question Drawer. ‹

Muck and other Fertilizers.

582. SIR,—I think I wrote you some months ago, that I had a large quantity of swamp muck close to my orchard. I am now drawing it into my barnyard, to put the winter's make of manure on it, and as I have thousands of loads of it, I would like to haul it direct from the swamp to the orchard (which is much nearer than to the barn), and as I cannot compost it all, I want to put a quantity on my thirty acre orchard this fall and winter. Will the muck give off its nitrogen and other plant food in time, and nothing be lost, by putting it direct on the land, and nothing else for a year or more?

I am going to compost a hundred or more loads of muck with unleached wood ashes and ground bones, which I can get here. Are the ground as good as dissolved bones? In putting the muck direct on the land, I put one load to four trees, and a part of it I will put about two bushels of unleached wood ashes to the load of muck, and one hundred pounds of ground bones to the acre, broadcast, as far as the limbs extend. As the muck is spread as it is hauled, I then run a cultivator or drag it over at once. I cannot put ashes and bones this fall on all that I haul into my orchard, but I can in the spring, at least on the most of it. Will the bones give me the same benefit next year if they are not put on the land before spring, as they would if put on this fall? Yours truly,

J. K. FULLER.

Reply by Prof. Craig, of the Central Experimental Farm, Ottawa.

1. Muck is chiefly valuable for its nitrogen contained in the organic matter, or elements of semi-decomposed plants. Under favorable circumstances, this nitrogen is available as food for farm crops; but in addition to its value as a nitrogenous food, its mechanical effect is beneficial to most soils, by improving their tilth and texture. A soil which is too heavy may be made light and more porous by an application of muck. Muck without fermentation does not readily give up its nitrogen to growing plants, and if applied to a soil without fermenting, the immediate result will not be very apparent or marked. Nothing will be lost by applying it direct to the soil without composting, but, as already stated, the returns will be much slower than if the elements of plant food in it have been freed by the chemical action which takes place during the process of fermentation. Very small results might be expected the first year from an application of muck which had been unfermented or uncomposted.

2. The difference between ground bones and dissolved bones is simply that the elements of fertility in dissolved bones are more immediately available to plants; whereas, in ground bones they only become available by the process of decay and fermentation, and, therefore, results come much more slowly. As in the case of muck, little result might be expected the same year from an application of ground bones, this fertilizer not being readily soluble. A compost made of unleached wood ashes, ground bones and muck would be a most valuable fertilizer, and one from which immediate and desirable results might be expected. The whole question is, whether the fertilizer is desired for immediate use or not. Ground bone undissolved, like muck, is slow in giving up its fertilizing constituents. Dissolved in sulphuric acid, or acted upon by ferments,

it becomes readily soluble. In the same way the nitrogen contained in muck, when composted with wood ashes and manure, is rendered more immediately available for plant food.

Strawberries.

583. SIR,—Do you think the ever-bearing varieties of strawberries grown in California could be grown here?

What do you know about the Williams strawberry, would you recommend it? I would like to find someone, who has no axe to grind, who has tried it. I want to set two acres more, and I want the best.

I. JOHNSTON, *Warkworth.*

The California ever-bearing strawberries would probably be of little or no use for market purposes, in Canada.

The Williams is a fine commercial berry. We grow it at Maplehurst, and find it a good cropper, of good size, firm for shipping, and hardy. It is a cross between Crescent and Sharpless.

Land Plaster, Rock Phosphate and Superphosphate of Lime.

584. SIR,—What is the difference, if any, between land plaster, rock phosphate and superphosphate of lime? Would the latter take the place of bone meal in mixing fertilizer? Reply through your paper and oblige

St. Thomas, Ont.

A. W. GRAHAM.

Reply by Prof. J. H. Payton, Guelph.

Land plaster is sulphate of lime, a compound consisting of sulphuric acid and lime. It is obtained from grinding gypsum rock.

Rock phosphate is ground up phosphate of lime (apatite). Sometimes it is acted upon with sulphuric acid; the result is mineral superphosphate. Rock phosphate will consist of phosphoric acid and lime; but, as a superphosphate, will contain in addition, sulphuric acid.

Superphosphate of lime likely refers to bone superphosphate, which results from acting upon bones with sulphuric acid, and is more active than the mineral superphosphate referred to. Bone superphosphate is usually preferred to bone meal, on account of its being more ready for plant use, and thus more available in the plant economy. Nature, by means of the carbonic acid in the soil, renders in time the phosphoric acid of the bones active; but man, artificially, reaches more quickly the same results, by using a stronger acid upon the bone, viz., sulphuric acid. Bone superphosphate may thus be used instead of bone meal.

* Open Letters. *

Novel Spraying Apparatus.

SIR,—Three years ago, while driving in the northern part of Terrebonne Co., Que., I stopped at a farm house to feed my horse and have something to eat; while conversing with the farmer, I asked him how his fruit trees paid him; his reply was that he could not raise enough fruit to satisfy the insects. I asked him why he did not spray his trees; he said he could not afford to buy spraying pumps, etc., and had not much confidence in spraying, anyway; he thought it a waste of money. Just as he was saying this, I espied an iron steampipe, about twenty inches long and one and one-half inch inside, crossways. I told him he could do with this for a while: he laughed (as much as to say, you are from town and don't know much about farming). Taking the pipe, I asked him for a small piece of tin, a file and a pair of shears. I cut the tin round, the same size as the end of the pipe, pierced small holes (as small as possible) through it, as at 2; I then filed the rough edges around the hole nice and smooth. Then, with a broomstick, I made an arm for the sucker, about twenty-two inches long; on one end I nailed a piece five inches long, as at 5, for a handle; on the other end I screwed the washer, as at 6, made of a piece of

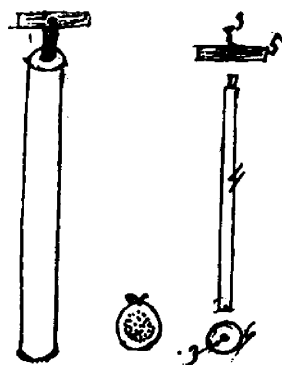


FIG. 327.—CHEAP SPRAYER.

trace, soaked in water to soften it, and cut it neatly round to fit the inside of pipe. I screwed on the end of the stick, see 4, Fig. 000, in centre, as shown at 3. To stiffen the leather washer, you may place two iron washers a little smaller than the leather one, one on each side of it, before screwing it (leather washer) on end of stick (or arm), 4. He had no soldering iron, so I told him to go to a tinsmith and have the tin, 2, soldered on end of pipe, and the sprayer was complete. I then told him to start spraying as soon as the buds would come and every fifteen days or so after, but not when in full bloom; and to use Paris green, one-quarter pound to fifty gallons of water. I said nothing about other insecticides, in order to make things look as simple as possible. A few days ago, I was driving by his house, not thinking of him at all, when he hailed me and I stopped, although I had little time to spare. He thanked me for my device of three years ago, and told me he had bought a spraying pump for \$18; he looked very jolly and happy, his trees and vines looked nice and healthy. The use of that little primitive style of spraying-pump had fully convinced him of benefits of spraying.

O. GAGNON, *Montreal, Que.*

The Fruit Crop in Germany.

Mr. Aug. Steer, Fruit Broker, Hamburg, Germany, writes on August 19th: "Our fruit crop in all parts of Germany is very abundant; we have enormous quantities of apples, pears and plums; and though prices are very low, they are nearly unsalable. Onions in Germany have suffered by the constant dry weather. They will be rather small and not very abundant."

* Our Book Table. *

CATALOGUES.

REID'S HANDY POCKET PRICE LIST of everything for the Fruit Grower. E. W. Reid, Bridgeport, O.

WHOLESALE TRADE LIST OF GEORGE ACHELIS, Morris Nurseries, West Chester, Pa., U. S., for the fall of 1893.

PRICE LIST OF THE SARCOXIA NURSERIES. James B. Wild & Bros., proprietors, Sarcoxia, Missouri. Fall, 1893; spring, 1894.

ILLUSTRATED CATALOGUE OF FLOWERING BULBS, Autumn, 1893. James A. Simmers, 147-151 King St. E., Toronto, Ont.

THE BRITISH APPLE MARKET.

LIVERPOOL.

Messrs. Simons, Shuttleworth & Co., Liverpool, cable:—"The few Canadian apples here this week have been sold at low prices, averaging 4/ to 6/ per barrel. New York fruit doing 1/ to 2/ better. We do not advise the shipment of early fruit; home and continental supplies are very heavy." My early advices of an abundant fruit crop throughout Europe are being confirmed by every mail; I must therefore strongly impress upon our shippers' minds the necessity of exercising great caution this season. Not only is there a very large apple crop in Europe, but all kinds of fruit will be very abundant and cheap. The Almeida grape and the Mediterranean orange crops will be unusually large, all contributing to force and keep down the price for Canadian apples. It will also be well to bear in mind that trade, generally, is in a very unsatisfactory state; the colliers' strike can only be looked upon with apprehension; without a good supply of cheap coal, every industry will be disorganized. I need but refer to the effect which the cotton operatives' strike, last year, had upon the price of fruit in the British markets, to show that this is not an imaginary danger. Great Britain requires but limited quantities of the very best apples, and these at moderate prices this season.

Yours truly,

Toronto, Sept. 9, 1893.

J. M. SHUTTLEWORTH.



Autumn.

MOOONS wane and wax, and wax and wane,
And Time reveals perpetual round ;
The Summers go and come again,
And Spring-times out of Winters bound.

Again we hail the Autumnal times,
When fields and woods are growing sere ;
And Nature's music faintly chimes
In this grey twilight of the year.

Unnumbered tokens of decay—
Of Summer's verdure—round us spread,
Remind us that we pass away,
Shortly to mingle with the dead.

And shall the lesson not inspire
With strong intent, and firm resolves,
To kindle up the smouldering fire,
While yet the day of life revolves ;

To labor for the weal or woe,
To lighten labor, lessen grief,
To soothe and cheer, where'er we go,
And lend the sorrowing relief.

Oh, let us rouse from shameful sleep,
Ere Death's cold winter drifts its snows,
And, thrusting in the sickle, reap
The whitened harvest—then repose.

Brantford, Ont.

W. H. PORTER.