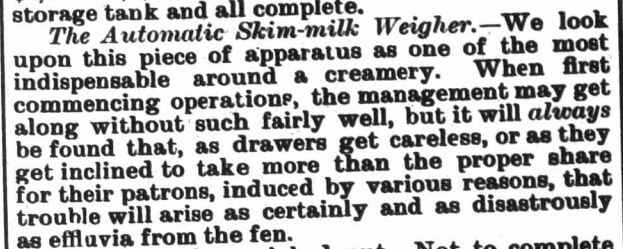


Bartlett pears. Where did we find them — on the trees in sod? Scarcely a basket up to the requirements could we get from those trees, while we never had finer or larger fruit than in the cultivated orchard. Nor are the trees in sod neglected; — the grass was cut and a mulch afforded. On the whole, if I wanted fine pears I would cultivate thoroughly (though not too late in the season), and choose varieties not so subject to blight. Beurré Bosc, Beurré Clairgean, Seckel, Sheldon, Lawrence Keiffer, and probably Beurré D'Anjou, would all do. I would go a little easy on Bartletts, and eschew Clapp's Favorite, which are almost worse than any to blight. It is my conviction that there will be always a good market for such pears as Bosc, Clairgean, and D'Anjou, and a great deal can even yet be said on behalf of the much-abused Keiffer.



as effluvia from the fen. But it can be weighed out. Not to complete satisfaction, as experience proves. If the drawers do the weighing, shortages will very soon occur. If the management finds a man to do it, they will early learn that the *daily* drain of even 25 cents per day to pay such help is a daily waste—an unnecessary outlay for which there is no adequate return. There is such a thing as an automatic skim-milk weigher made, that distributes with unerring exactness this valuable by-product, and which cannot be tampered with by drawers or patrons. While you weigh out the milk it weighs out the skim milk—patrons are *all* satisfied, and the management have thrown another band around their patronage. That creamery that carefully pasteurizes its skim milk, and as accurately distributes it, has made a great stride toward perfection and toward the strengthening of its foundations.

— F. J. SLEIGHTHOLM,
Supt. W. D. School.

The Fruit Grower Looking Backwards.

BY M. BURRELL, LINCOLN CO., ONT.

This is the time of year when every man who has tried to pound a living out of the cold and silent earth can look back and criticize profitably his season's work. He must be a dull man, or almost a perfect farmer, who has not, after such a retrospective analysis, learnt "how not to do it," as well as something of the science of "how to do it." In some respects the farmer, by the very nature of his business, is in a harder position than the tradesman. The latter not only turns his money over more frequently, but there is an equally rapid turn over of "experiences." The mistake of this week he rectifies next week, and so on. The unfortunate farmer makes a mistake and ten to one he has to wait a whole year before he finds it out or can profit by the discovery. There is all the greater necessity for him to understand his business thoroughly and avoid making mistakes, which are often costly and sometimes almost ruinous. This may even be more forcibly applied to horticulturists, for a mistake in the location of an orchard or a weak yielding to the siren voice of the bland "tree man" will mean hard labor for years and ultimate disappointment. In cultivation alone it is surprising to find how little some people know of the philosophy of the subject, or knowing, do not practice.

practice. We have come to look upon weeds as not only robbers of the soil's fertility, but as still greater robbers of the necessary moisture of the soil. Fruit, composed as it is of from 85 per cent. to 90 per cent. of water, usually has its work cut out to pump enough from the soil in a dry season, and yet not only do many of us neglect the constant stirring of the soil to prevent evaporation, but we let pigweed, lamb's-quarters, purslane, etc., rob us still further of the little store of water. Purslane, or "pusley," is a good illustration—one of the fattest, greediest, and most prolific of the whole crew. I once counted over 50,000 seeds in an adult "pusley," and what a succulent, dropical beggar it was! and what a cheerful prospect it was to fight 10,000 or so little "pusleys" round that spot next year! Mr. Shutt, of the Central Farm, did some interesting analytical work on this same weed last year. About 93 per cent. of it was water, and the plot where it was allowed to grow yielded a weight equivalent to 15 tons to the acre. Of this 15 tons about 14 would be water, 65 pounds nitrogen, 198 pounds potash, and twenty-four pounds phosphoric acid. We may not grow "pusley" by the acre, but the moral is obvious. We keep the cultivator and hoes going steadily, and the drier the season the more we cultivate. Everybody who grows peaches knows that neglect in this matter spells f-a-i-l-u-r-e; but we don't realize it as strongly as we might in other fruits. I am aware that pear blight is slightly worse when pear trees are highly cultivated; nevertheless, the alternative of keeping pear orchards in sod has its drawbacks. Some of my trees are in sod; most of them cultivated. Orders came this year for a lot of first-class

Spraying for the rot of the cherry was not quite so successful as we would like to have seen it this year. This monilia of cherry and plum spreads with frightful rapidity if climatic conditions are favorable, and spraying should not only be thorough, but very frequent. Just east of my barn is a signal illustration of the value of spraying to foliage. A small block of "Pond's Seedling" plum trees about eight years old was sprayed four times, with the exception of three trees. For the last three weeks these untreated trees have been ingloriously despoiled of their leaves—bare to every wind that blows. The sprayed trees are now (October 15th) almost as full of foliage as in mid-summer. Although the past season was not a very bad one for mildew of the grape, yet spraying amply repaid for the trouble and expense; varieties like Brighton and Roger 15 where sprayed, being far cleaner than the unsprayed vines. We make a point of doing each side of the row and doing it thoroughly. As to varieties, a good selection for commercial purposes is: *Blue*—Worden, Concord, and Roger 44; *Red*—Roger 9 (Lindley), Delaware, Vergennes, Wyoming Red; *White*—nothing that I know can equal Niagara, though Moore's Diamond will probably rank next. Wyoming Red is early and very prolific, throwing out a great number of laterals and often having four or five bunches on one shoot. It should be severely thinned. Quality is not high. The Brighton is one of the highest-flavored grapes we have, but its tenderness of skin, liability to mildew, and almost blue color when quite ripe, are grave defects. Vergennes is one of the best late red grapes, but needs severe pruning and generous treatment. The Worden, especially on heavy soils, is most desirable. It is a better grape than and outbears the Concord, and in spite of its thin skin will carry a long distance.

a long distance.

Why do not more people sow **Crimson clover**? In spite of one or two failures on some plots, I have done exceedingly well with it now for three successive years. A series of trials and experiments have convinced me that the end of July or very early in August is the best time to sow, and 20 to 25 pounds of seed to the acre is none too much. There is big money in plowing under the old strawberry beds after the fruit is off and seeding to **Crimson clover**. I never failed to get a good stand in such a place, and largely because our strawberry beds have been well supplied with potash and lime, and it is in such soils that the micro-organisms that store nitrogen in the clover roots flourish. This year a piece of oats of two acres was cut early for hay and the ground immediately plowed and seeded with **Crimson clover**. It is now a beautiful "mat" six inches high, and will be worth anyway \$15 an acre if it winters well. Even if plowed under this fall it is worth half that sum, and, after all, if a crop will pay you two or three hundred per cent. on the outlay you can hardly kick because it doesn't do more.

It will soon be time for fixing up for the winter. Our practice here is to plow up to the trees in the young orchards and bank well with a few shovel-fuls of earth, to prevent damage by mice. Where orchards are older (and especially if underdrained, as they should be), a few cross furrows are run to let off surface water, and the work is accomplished more with the disk harrow and less with the plow.

Fine Fruit from Nova Scotia at Omaha.

Among the recent shipments of fruit sent from Nova Scotia to the trans-Mississippi Exposition at Omaha, by instruction of the Hon. Minister of Agriculture, were some extraordinary specimens of apple. One of Chebucto Bounty weighed 20 ounces, and its largest circumference was 15½ inches. A specimen of Blenheim Orange measured 13½ inches in circumference and weighed 10 ounces. Forty-nine varieties were forwarded in all. The specimens were all excellent, large, and high-colored. Among the other fruits from Nova Scotia was a barrel of the celebrated Gravenstein apple, which is raised in such great perfection in that Province. This excellent exhibit of representative Nova Scotia fruits was got together by Mr. R. H. Starr, of Wolfville, N. S. The fruit exhibited at Omaha from different parts of Canada has produced a strong impression on the side of the visitors as to the favorable character of the Canadian climate.

Any present subscriber sending us in two new subscribers and \$2.00 will have his or her subscription extended one year.

Milk-cistern and outlet tube of milk-gland laid open.—*a*, Basis of teat; *b*, upper end of milk-cistern; *d*, lower end of same and upper end of teat; *c*, dilation of canal of the teat; *f*, rosette on end of lower portion of canal of teat; *h*, small gland-duct; *o*, large gland-duct.

ber, which overlie the four principal teats of the cow. The average capacity of the two milk-glands of a cow, with that of the four milk-cisterns, runs from 10½ to 11½ pints after she has been milked. It is impossible, however, to estimate how much milk can be stored in the inside of the udder, on account of the elastic nature of the tissue which surrounds it. Everyone who has milked a cow knows how little milk there seems to be in a cow's udder when first taken hold of, how the handling of the teats stimulates the glands to produce to their fullest extent, and how often more milk is obtained than would seem warranted by the size of the udder.

All the most recent investigations seem to coincide with one another as to the important part played in milk secretion by the milk-glands. The amount given depends on the activity of this organ, subject to the quantity and quality of the food fed to the animal, and its state of health. Beyond this, very little can be said, except that it is probable that the milk-fat is derived partly from the fat in the blood and partly from the products of the changes that take place in the animal tissue. Future experiments may throw more light on this question.

Some Coming Creamery Apparatus.

The Pasteurizer.—This apparatus, as usually made, is a combination of a "scalder" and "cooler" in two separate pieces of machinery. The "Potts in pasteurizer," however, is a complete pasteurizer in one article, and is the only pasteurizer with which we have acquaintance in which the milk or cream can be held at the desired temperature for a length of time before being cooled—really a basic principle in true pasteurization. This machine is not to our knowledge in use in Canada. The "Reid" pasteurizer, made in Philadelphia, Pa., and that made by R. A. Lister & Co., England, are the only pasteurizers suited to regular creamery practice that are used in this country. In the first-named apparatus the "scalder" is fed by gravitation from the receiving vat, itself raises the heated milk to the separators, when a pump is necessary to elevate the cream to the cooler over the cream vat. In the last-named, this is reversed. The milk is pumped into the heater (which elevates to the separators), the cream then runs into the "scalder," which itself elevates the cream to the "cooler" over the cream vat. If desired, a "turbine scalder" (operated and heated by steam jet) may be used in place of the heater, and a pump used to elevate the cream.

The Western Dairy School is the first institution to undertake this work on a large commercial basis. The results of the work now in progress there will be published at a future date.

The Ammonia Compressor.—The question of the cooling of cream in the vat, the preservation of any desired temperature in the churning and working room, and the insurance of a low and