

a spade, I go along the line, striking it into the ground six inches or so deep, and a foot and a half or so apart. I bend the handle a little from me, then back again, leaving a hole at the back of the spade, into which a boy drops the roots of a plant spread out in fan-shape, and deep enough that when I draw out the spade, and press my foot against the earth at the side of the hole, it covers the roots nicely, but not the crown of the plant. In this way they are rapidly set out. Care should be taken to get the plants set at a proper depth, and that the earth shall be pressed firmly against the plant, but that the crown of the plants be not covered. I would not advise planting too many to start with. Five hundred plants would be better than 5,000 to begin on, as they are likely to get better attention, and give better and more encouraging results; and, when the business has become more familiar, the size of the plantation may be increased. These 500 plants should not cost over \$3.00, and, if properly cared for, the fruit, at the price for which it sells in Eastern Ontario, should bring from \$30 to \$50. Henry Woods, of Carleton Co., near Ottawa, from 200 plants, sold, in 1907, \$35 worth of berries, after having all they wanted for their family use. From the same plot, in 1908, he sold about \$20 worth. But these were berries of the above-named varieties, carefully attended to. Smith Bros., of Carleton Co, just west of the City of Ottawa, in 1907, picked from an acre and a half 13,841 baskets of berries, which they sold for \$1,602.78. So, you see what good varieties, properly cared for, may be made to yield. And if the farmer's daughter is allowed to devote a little spare time and land to the growing of this fruit, she can easily sell them to the neighbors, or to the village grocer, and make a nice bit of money with which to provide her new shoes or new hat, without having to ask her parents for it. In such case, she will not be so anxious to go to town to learn dressmaking or millinery, or clerk in a store. The light, pleasant work in the open air of the garden will print the blush of the rose on her cheeks. Her contact with nature will give her health and happiness, and make her life worth living, and her worthy the best home and best young farmer in the neighborhood.

The fruit should always be picked in nice clean, new strawberry baskets, which only cost about \$4 per 1,000, and make the berries look much more attractive than if picked into a larger dish. The berries should be allowed to ripen well, but not get soft before they are picked; the baskets should be filled as full as possible without bruising the berries, and they should be marketed the same day they are picked, if possible.

It is not necessary to buy plants every spring, or every second spring. If good plants, of good varieties, are secured to begin with, and they are properly cared for the first summer, and not allowed to fruit any, to exhaust the vigor of the parent plants, you can select enough of the strong young plants from these to do your setting the next season; and so on, year after year.

Carleton Co., Ont. W. J. KERR.

Protection from Sunscald.

Orchards on exposed locations are liable to damage from sunscald during winter, when weather conditions are changeable, particularly when high temperatures are in evidence. Sunny, spring-like weather, followed by severe frost, is responsible for a bursting of the bark, and sometimes serious injury to the tree. Heavy pruning in winter is objectionable, for the reason that the sun is given freer range on the trunks and lower limbs. Orchardists have devised various schemes for preventing the injury. In a paper read before the Fruit-growers' Association of Prince Edward Island, some time ago, John A. Amear, of King's County, spoke of sunscald as follows: "My orchard slopes gently to the south-west, and is well sheltered on all sides except this one. The north end is protected by a heavy growth of spruce, so that the rays of the sun are very strong, and most of the trees are more or less injured by sunscald. Already, about eighty have died, and as many more are in bad condition. The south end of the orchard is almost entirely free from sunscald, and I attribute this to its being more exposed. All varieties are not equally subject to it. In order of resistance they stand, King, Astrachan, MacIntosh Red, Ben Davis, Spy, Pewaukee, Inkerman, Wealthy and Ontario.

Much can be done to prevent sunscald by banking clay around the trees in autumn, and by the use of shields. Two years ago I neglected banking with clay and putting up the shields, and almost all the injury was done that year. The shields are made by nailing two half-inch boards, four feet long, one four, and the other four and a half inches wide, on a stake, so as to form a half-square. They are driven into the ground quite close to the tree, so as to protect the lower part of the trunk completely from the sun. After this, the clay is thrown around the tree and left that way for the winter. In the spring the clay is levelled down, and the shields

are gathered up in a cart, and stored till autumn. They cost very little. I made them, at odd times, out of waste material. If one were buying them, he could easily figure out what they would cost. In 100, there would be of boards 100 running feet, 4 inches wide, and 1/2 inch thick; 100 running feet 4 1/2 inches wide and 1/2 inch thick; and 100 stakes 5 feet long. A handy man would put together about 300 a day. Besides, there would be the cost of the nails."



Shield to Prevent Sunscald. Used in P. E. Island Model Orchard.

THE FARM BULLETIN

Between Truth and Error.

Editor "The Farmer's Advocate":

I have read your interesting controversy, "Protection vs. Free Trade," from the start, with much pleasure, and am glad to see so many champions of free trade stating their ideas. I read with much interest John Newton's letter in defence of protection, in your last issue. Mr. Newton puts his case very ably, very effectively, and very plausibly, and must say the plausibility of his arguments appeals with great force to those who are interested in labor, which, perhaps, a better acquaintance of facts and experience, from living both in a free-trade and protected country, would tend to diminish, by throwing some side-lights on that which is not apparent to every one living in a protected country. Mr. Newton states that Germany and America have made greater comparative progress under a high protective policy than Great Britain has made under free trade, etc. This, in itself, is hardly worth debating, especially after appreciating all the factors that have been at work in developing these countries. Under any tariff system, Germany and America must have gone ahead, for the industrial revolution in the former was inevitable in the circumstances; while, in the latter, no power on earth could have stayed an energetic people like the Americans from exploiting the wonderful natural resources that lie all around them; this would especially apply to Canadians.

With regard to labor benefits from protection, as stated by Mr. Newton, a few words on what free trade has done for Great Britain should enable readers to draw their own conclusions. Free trade has been in force in Great Britain for six decades—sufficiently long to judge the effects:

First.—It has enabled her, to a great extent, to surmount the walls of foreign tariffs, and still to export goods in competition with the protected manufacturer, who, in many cases, is as much handicapped by the weight of the protective duties he has to pay on the elements of his production as he is benefited by the protection of his finished product.

Second.—It has enabled her to maintain her supremacy in the neutral markets of the world.

Third.—It has made that country the cheapest area for the establishment of those new industries which the progress of science and civilization is constantly creating.

Fourth.—It has thrown into her hand great volumes of international trade, which, from their nature, are incapable of being effectively protected, such as the shipping trade of the world, and those numerous commercial and financial international services which are not performed for nothing.

At the same time—and this is of much more direct importance to the worker—it has enabled Great Britain to pay much higher real wages, with shorter working hours, also old-age pensions, than her continental neighbors. Another point which protectionists themselves do not deny is that it has cheapened to an incredible extent the cost both of necessaries and luxuries.

Whatever may be said against free trade as a working system, it cannot be denied it was righteously conceived, that its advantages are universally diffused, and that it does not buttress the interest of the few against the many. So much cannot be said for protection. In America, where protection thrives so vigorously, it has provided a congenial soil in which the trusts can flourish like a green bay tree, and it has been authoritatively stated that only 600,000 Americans benefit directly or indirectly in their business by the tariff. The rest have to pay for it.

During the debates and the controversies of this subject, says one writer, in striking the ethical balance between the two systems, it is scarcely noticed that it is a battle, not only between truth and error, but between light and darkness. That, in the realm of trade, it is a constant struggle of honest industry and intelligent enterprise against corruption and intrigue; and in the realm of political life, a struggle of the greatest influence for peace and goodwill among nations against international jealousy and strife.

Frontenac Co., Ont. JOHN HUMPHRIES.

Whey-butter Experiments.

Bulletin from the Ontario Department of Agriculture, Dairy Branch, Toronto, Feb., 1909.

In 1895, experiments were carried on at Cornell University, New York State, to determine, if possible, whether or not it was advisable to attempt to recover the butter-fat which was lost in the whey from cheese factories, and manufacture it into commercial butter. Since then a number of factories in New York State have found it profitable to recover this fat, by use of centrifugal separators, and have been making whey-butter on a commercial scale.

Experiments were made recently by Prof. H. H. Dean, at the Guelph Dairy School. Within the last year or two, the question of buttermaking from fat lost in the whey has been receiving increased attention, and both the Agricultural College and the Dairy Branch of the Department of Agriculture decided to carry on further experiments.

Former experiments having shown that an average of about 2 1/2 pounds of butter could be procured from 1,000 pounds of whey, it looked as though this question of whey-butter was an important matter, when the figures for the entire industry for the Province of Ontario were taken into account. At the prevailing price for cheese and whey-butter for the past season, had all—that is, within practicability—the fat which was lost in the whey from the cheese factories of the Province of Ontario, been manufactured into butter, it would have increased the revenue from the cheese industry by 3.64 per cent. When the cost of manufacture, as shown below, is taken into consideration, the net increased revenue from the cheese industry would have been 1.64 per cent. This appears to be quite a small percentage, but is a large sum in the aggregate, and if this whey butter could have been procured at a cost which was appreciably smaller than the selling-price of the same, the investigation would give us data which would be well worth considering.

So, during the season of 1908, experiments of a fairly exhaustive nature were carried on by J. W. Mitchell, Superintendent of the Eastern Dairy School, Kingston, and Frank Hearn, Chief Dairy Instructor for Western Ontario, under factory conditions; and by H. H. Dean, Professor of Dairying at the Agricultural College, in the Experimental Dairy. These experiments were carried on, to see whether or not this question of manufacturing butter from whey would be profitable to the average cheese factory of Ontario. The data secured dealt with the yield, cost of manufacture, the quality of the product, and the