

Irrigation in the Territories.

BY A FARMER'S DAUGHTER.

Alberta has this year had her share of a truly abundant harvest. Not only has it been abundant in the region lying between Olds and the Saskatchewan, where, with invariably an ample rainfall, agriculture is a fairly safe pursuit; but what are termed the arid districts of Southern Alberta have also had a fair show of prosperity. With this abundance the question of artificially supplying moisture to the ground, by means of irrigation, seems not to press itself for settlement with so much urgency. But this is not really the case.

The returns this year from districts with a moderate rainfall, where losses by drought come almost as regularly as the seasons, and where nothing is so certain about the fate of the crops as uncertainty, but emphasizes the fact that it is only water regularly, judiciously and amply applied that is needed to make what is erroneously supposed to be the barren parts of Southern Alberta and Western Assiniboia bring forth and yield their harvests with an abundance and regularity second to none. Without water these districts are only fit for what they now are, a great, free cattle range, as the usual rainfall is insufficient to support agriculture, except in a few localities, where, with as favorable a season as the past, fairly good crops may be expected. What is wanted in these districts is irrigation, and the people of Calgary and Southern Alberta are now thoroughly roused to the fact that with the adoption of this system the success of their future is beyond computation. A few isolated experiments have been made in these districts in the last year or two, and these have served to demonstrate to the many the future success of the undertaking. A few companies have also been chartered to build necessary works, but they cannot anything like grapple with the need of the country. What is needed is legislation, and that at once, on a subject fraught with such importance. In a new and sparsely settled country, such as Alberta is, the necessary works cannot be established without aid from the Government, and it remains for the people of Alberta and Assiniboia to put forward their claims respectfully, but firmly, to the Dominion Parliament for a reasonable appropriation for the construction of suitable works. The necessary water is here in abundance from innumerable and never-failing mountain streams, and is only wanting man's ingenuity to put it to practical use. "Will it pay?" is the first question naturally asked by the practical man. When was irrigation ever known not to pay? The fact that what were twenty years ago the barren sand-plains and sage-bush deserts of the Arid South are to-day smiling under fertile orchards and green meadows should answer that question.

Take the now famous orange districts of Southern California as an example. The best type is perhaps found in Riverside, with its beautiful homes, its gardens, orchards and boulevards, surpassed nowhere in the world. Twenty years ago it was a poor sheep pasture, dear at one dollar twenty-five an acre. To-day the land is worth three thousand dollars an acre when the orchards are in full bearing, and this is only one instance in the many. Alberta has all the elements to make it a grand country. It is the land of sunshine, of dry, pure air, of long, fruitful summers, of short, genial winters. Whatever may be done in Eastern Canada could be excelled here if the fertilizing influence of water was brought to bear on the rich soil. It is the natural home of the stockman, dairyman and farmer. With irrigation these and kindred industries would receive such an impetus that Alberta, before long, would be recognized as one of the prolific spots of the earth.

Agriculture by means of irrigation is very different to farming as it is generally understood. First of all, the crops are insured against any possible failure by drought. Second, having water whenever it is needed, and in as large quantities as required, the crops must be of the best quality and largest quantity per acre. Third, having land producing crops without danger of failure, of the best quality and greatest quantity, it goes without saying that it must rise to very high value. The most valuable agricultural land in the world to-day is the irrigated lands in the Southern and Western States, and land which to-day, in Alberta, could not be given away, in a few years, with irrigation, is bound to be among the most valuable in the Dominion. Again, irrigation always means a dense population. The irrigated land is pre-eminently the land of the small farmer, and it is on these that the country's condition of prosperity is largely dependent. Then, within the next two years hundreds of thousands of acres of land, that is now leased property for the cattle ranges of the country, is to be thrown open for settlement, besides the thousands already offered, and it surely behooves the Government to make some provision for the needs of the country before bringing people here to occupy it. Bringing water to arid lands means bringing wealth to the country, adding to the prosperity of the country, ensuring the yield of crops and rendering the settlers independent of the drawbacks of the climate.

Government aid has invariably been forthcoming

when it has been found actually necessary in order to promote the prosperity of the country and add to the general commerce and wealth of it to call for such aid. Then why should the line be drawn at irrigation, so deeply necessary to the prosperity of Southern Alberta and Western Assiniboia? The people know their needs, and let them see to it that this question is placed before Parliament in a proper and forcible way. Let them press the question so respectfully, yet firmly, that the Dominion Government cannot close their eyes to their needs and necessities.

Business Farming Versus "Farming."

By the first I mean farming carried on on the same business principles as a mercantile business. In this the merchant gives a certain amount for a thing that he may get more for it. It is this more that is everlastingly in his eye and moves him in all transactions. In "Farming" the work is directed by custom or notion, and in the hope that "by the aid of Providence"—or "spells of public work"—"people may pull through some way."

What should we think of a merchant who would go to a wholesale house, buy goods, and then proceed to sell them without prices, but trusting that the guidance of custom and the goodness of his customers would give him costs and profit? Much like this is the case of the farmer who *forks* over to what stock he happens to have the hay he gave his hard work for—the equivalent of hard cash—and often the cash itself—without any calculation of what he is to get for it, but trusting to custom "to get through some way." The record of the feeding, etc., of a prize steer at the Chicago Fat Stock Show tells that every lb. put on him the first year cost only 3.21 cts. per lb., while all put on him the third year cost 11.82 cts. per lb. At the end of the first year he would have sold at a profit of \$14.28; at the end of the third year he sold at a loss of \$39.30. Many farmers with plenty of feed and guided by notion only would be in favor of keeping the said steer till three years old.

Lately, a neighbor one evening while looking at a small cow I had bought for \$20.00 remarked that he thought I had made a poor bargain, as she was so small. A big cow of his stood near and I asked him if he would exchange with me. "Tut!" said he, "I would not give mine for two of them." These cows had calved about the same time and grazed upon the same pasture. It was milking time and I suggested a somewhat definite comparison of their works before disputing further about them. We got a spring balance and weighed the milk. His big cow gave 1 lb. more than mine—not much "to brag on." We then sampled both milks and went to my Babcock Tester. The milk of my despised little cow showed 5.2 per cent. of butter fat; that from his "fine big cow" 3.2 per cent. Nor is this all. His big cow probably takes a third or half again as much food as mine. Taking both into consideration, it is safe to assume that my little cow gives twice as much butter for the same food as his cow. The revelation made by that test is the death warrant of the big cow. She shall die this fall. I got and keep the said little cow, because for every dollar's worth of feed she takes from me she gives me more than a dollar's worth of milk. And in spite of the fact that a decidedly unlovely poor old maid raised her, I like this little "hard-looking" cow, for she gives me daily that *more* which helps me to feed, clothe and educate the children whom I love. My neighbor kept and liked his cow (before that test) because he raised her himself, and she is a fine big cow.

So much for business farming *versus* notion farming till the next rainy day. J. D. M.

Lime and Nitrogen.

In a translation from the German, which appeared recently, it was stated that lime was an accumulator of nitrogen. This is true in part only; it certainly increases the stock of available nitrogen in the soils, for when caustic lime is applied to land, it at once decomposes all organic matter in it containing nitrogen, as grass, manure, muck, etc., and liberates nitrogen as ammonia. Though the soil retains with tight grasp a small quantity of ammonia, still, if the amount liberated is large, a corresponding amount will be lost, so the folly of applying lime in large applications is seen. No more should be applied than will liberate sufficient ammonia to be taken up by the growing crop. The immediate effect from an application of lime on land which contains a considerable amount of organic matter is to greatly increase the crop; but, if no plant food is added, after a few years have elapsed the soil will be left poorer than before. This will be readily understood when we consider that lime is not really a plant food, but more of the nature of a stimulant, and if large crops are taken off and nothing added, the land is sure to become exhausted. These facts have given rise to the common idea that large applications of lime impoverish the soil. More lime than is necessary for the use of plants is found in all ordinary soils. Lime also tends to the unlocking of inorganic food supplies, and this is especially true of potash and soda. It also has a good effect upon soils which are known as sour, as it will, to a certain extent, neutralize the acid in the soil. Other advantages gained by an application of lime will be the rendering of stiff soils more pliable, and destroying various forms of insect life and fungus growths.

DAIRY.

Skimming Milk.

The following letter has been received, which speaks for itself, and an opinion asked concerning it:—

Odessa, Nov. 3rd, 1893.

Editor of FARMER'S ADVOCATE:

Will you kindly answer, through your paper, what you think of taking three pounds of butter from one hundred pounds of milk and then making cheese of the balance?

SUBSCRIBER.

If "Subscriber" means that a farmer or dairyman makes three pounds of butter from one hundred pounds of milk produced on his farm, and makes the balance into cheese and sells it as skim-milk cheese, we have only to say that he is doing a perfectly legitimate business, and as long as he does not deceive people as to the quality of his goods he has a perfect right to do as he pleases with his own product.

But if "Subscriber" means that a patron of a cheese factory, or one who "pools" his milk with his neighbors, deliberately makes three pounds of butter from one hundred pounds of milk and then sends the balance to the cheese-factory to be made up into cheese along with his neighbors' good milk, then we have a very different opinion to give.

We have the same opinion of a man who sends skimmed or watered milk to a cheese-factory as of the common thief or burglar who breaks into a man's house and carries off his property. In some instances we have a higher opinion of the common thief, as he does not lay claim to any great degree of honesty, while the man who "pools" skimmed and watered milk with his neighbors' whole milk endeavors to maintain an attitude of honesty and straightforwardness in the community while carrying on his underhand robbery. It does indeed seem to be a mean, despicable piece of business for a person who has the respect and good-will of his neighbors, and maintains the outward appearance of honesty towards them, to take advantage of his good reputation among them to systematically take what does not belong to him by supplying milk to a cheese-factory from which butter has been made or water added. The man who makes three pounds of butter out of every one hundred pounds of milk and sends the balance to the cheese-factory is just taking that much from his neighbors. If butter is worth twenty-five cents per pound, he is getting seventy-five cents a hundred out of his milk, the larger portion of which belongs justly to his neighbors with whom he is "pooling" milk at the cheese-factory.

It is difficult sometimes for the human mind to conceive of what "meanness" a man is capable of doing when he has the opportunity or the temptation is thrown in his way. The case noted by "Subscriber" is almost without parallel among the many cases of tampering with milk supplied to our cheese-factories. In the milk received at our cheese-factories after 3 lbs. of butter have been made out of 100 lbs. of milk, there is not much butter fat left, and the balance of the milk would only be fit to make an inferior kind of skim-milk cheese. There is a case reported from one of the factories in Western Ontario where a patron pleaded guilty to adding 60 per cent. of water to the milk before he sent it to the factory. But such instances are unusual, and, as a rule, persons tampering with milk don't go so far, but content themselves by adding from 25 to 30 per cent. of water, or by taking off about 10 of the cream. Doubtless a great many of them think that the guilt is not so great when only a small fraud is committed, but the act of dishonesty is just as flagrant.

So many reports have appeared in the public press during the past season of patrons fined for tampering with milk, that it may appear to many that such dishonest practices are on the increase, and that the law, instead of stopping, is unable to mete out the punishment which such offences deserve and offenders are not afraid of it. Such is not the case. The law is more workable than it ever was, the instruments for testing milk are more accurate, inspectors have a better knowledge of how to detect adulterated milk, and consequently more offenders are brought to justice, and thus it may appear that such practices are on the increase. There was a great deal more tampering with milk supplied to cheese-factories 10 years ago than at the present time. But at that time the tests were not as reliable, the law had too many loop-holes by which the guilty party could escape, inspectors and cheese-makers were not as well posted, and therefore not so many offenders were brought to justice. Thus it was that a much smaller proportion of offenders was found guilty, which gave the impression that skimming or watering milk was not carried on to any great extent at that time.

With the Babcock Milk Tester and the Lactometer, an inspector who understands his business thoroughly and does his duty has not much difficulty in locating the patrons who are given to tampering with milk. We have had no definite reports from inspectors in the Eastern portion of the Province of Ontario this season, but there is a striking example of what can be done in this line in the report of Mr. T. B. Millar, Inspector for the