him who helps himself." If we do not sow the seed, we cannot expect a crop If we do not prepare the soil carefully, we cannot expect the crop to be abundant and profitable.

God has given us the power to acquire such knowledge as will enable us to do this intelligently, and the hands to perform the work Let us apply this power faithfully and in combination with our own efforts we can truly say we are depending upon what God gives us.

The remark I quoted was called forth by the probable partial failure of the coming hay crop, in consequence of the thawing and freezing of the roots of the grass. Now forewarned is fore armed, and it is not for the farmer to sit down and say "Oh the failure is a dispensation of Providence, to which I can only submit, but to bestir himself and see if there is not some means by which its disastrous effects may be remedied. In any season it is well to plant some supplemental forage crops, but this year, when, in many districts, the hay crop *must* be light, it becomes imperative that we should do so. We have the time before us to do this—and various crops which we can grow to meet the coming scarcity of hay.—Why not increase the quantity of the root crops. All the esculent vegetables are good fodder for cattle, of various alimentary value, and are much neglected or overlooked by many farmers. It is true their culture involves extra labour and manure, but if extraordinary danger threatens, our duty is to make extra exertions to overcome it. The leguminous plants such as peas, tares or vetches, clover, etc, will give us excellent green forage to supplement the pastures and hay crop. Oats, barley or rye if cut when the grain is in the milk either fed green or dried possess a good nutritive value.

Ensilage corn will be found very useful in this respect. When the pastures begin to get short, if we have a patch of fodder corn at hand we can cut a bundle of it daily, spread it on to the pasture which has been eaten bare; and keep our cows in fine condition and a good flow of milk And as the autumn advances, if we have done this, we shall avoid the temptation to turn our cattle on to the meadows to the injury of our next season's hay crop. One reason why this crop is destroyed by the frosts we have experienced this winter is that the grass which should have aided in protecting the roots and assisted in the fertilization of the soil was eaten off last fall as a necessity, because no crops had been planted to supplement the pastures.

I meet with some men who have no thought for the future. and these are they who complain of *climate-taint*, failure of crops, etc. and seem to suffer all "the ills which flesh is heir too." In nine cases out of ten it is their own neglect which produces the difficulties under which they labour. An anecdote came under my notice which bears on the subject.

A young man of rather dilatory habits. which were well known to his neighbours, thinking a minister's would be an easier life than a farmer's, applied to the Presbyterian, conference for admission as a student for the ministry, saying to the leader that he had seen a vision: He saw a large ring of fire in the sky and in it the letters P. C.; he said he thought this meant Presbyterian Conference. and came right along to offer himself The leader of the Conference, knowing his proclivities and probably his motive, said to him: "My dear young friend, you are mistaken in your interpretation of your so called vision The letters you saw meant—*Plant Corn*—. I wish that the coming spring every farmer who is depending entirely on the hay crop for his next winter's forage for his stock. could see the same vision, interpret it as did the Conference leader, and Plant Corn.

Geo. Moore.

INTENSIVE CULTIVATION.

I believe it has been said by some one, that the man who makes two blades of grass grow where only one grew before is a benefactor to the human race; I do not wish to pose as such a one, but would like to give your readers an idea of what was produced on one acre last year. There were 80 barrels of apples, 300 lbs grapes, 1 ton of hay, 1 ton of corn stalks, 15 bush potatoes, 40 bush. mangels, with gooseberries, black and red currants, raspberries, strawberries that, had they all been sold, would have brought more than sixty dollars ($60). Then, there were carrots, beets onions, celery, cucumbers, melons, lettuce and other vegetables, enough for a family of ten without exhausting the supply To put it at a modest calculation the returns were considerably over $300 How many acres in this province of ours can show such results? Many will say it is all very well, but how much did it cost to produce it? This is a very vital point, less than $5 00 was expended on fertilizers and labor, besides work done by my own family. This same acre has been doing an average of last year's crop for the last ten years The only means of keeping up the fertility is the manure from one cow for the whole year, and one pig during the summer season with the slops from the house, and manure of about 20 hens. I can assure you nothing is lost however, even to the coal ashes which are used to allow the hens to roll in and absorb the droppings. The cow is kept in the stable at night during the summer, and is bedded with cut straw; wood ashes, or a little land plaster, used as an absorbent, and each morning a fine barrowful of manure is got which is placed round an apple tree with that days chamberlye; so that during the summer, with cleaning out the pig once a week, and used the same way as the cow manure, the apple trees have all been attended to. The winter manure of the cow is used for the vegetable and garden produce. sometimes a small compost heap is started with any long weeds or useless vines. By using a small quantity of wood ashes or lime in the heap, the soap-suds used in the first washing of the clothes are also utilized on the fruit trees. The minimum of loss in the manure both solids and liquids is studied, with the idea, that, if you wish good results, the land must be well fed with good manure No fertilizers have been bought, except an occasional bag of land plaster Last year was not a very good year for fruit. In former years we have had double the amount of gooseberries, one year alone $53.00 worth was sold while more than one half of the apples trees were not bearing The frost in the early part of May did considerable damage; the trees were sprayed 4 times, once before the buds and immediately after; also just before and after blossoming.

I do not suppose there is anything that there is more loss in each year to the farmers of this broad Dominion of ours than in manure. Some people never stop to think of their loss, what is it anyway, it is only manure, some bore holes in the stables to let the liquid go down through and will not be bothered with it; save it. it is the most precious of it all.

Peter Macfarlane.

Chateauguay, March 10 1896.

MAKING BUTTER IN WINTER.

Why butter won't come—Frozen cream—Porosity of frozen milk—Making up the butter.

In former years butter making was considered, and written of as an art but making gilt edged butter is a science, and by its rules, anyone with common intelligence can make good butter. This is true of any system, and no less so of the system which I shall endeavour to describe.

Presuming in the first place, that "the rule of thumb" must be broken, and a thermometer used instead. I say this, because I know that very few of those who have a small supply of milk to care for, see the necessity of one, while sometimes the difference in the market value of one churning would buy one. I can remember long before thermometers were used to test the temperature of the cream, that it would be "guessed" that 'the reason the butter won't come is because it is too warm" consequently it was cooled by water from the spring. And after another discouraging term at the churn, an equally decisive "guess" was given that the cream was too cold with the accompanying dash of warm water, with the inevitable grease as a result. Of the successive pounding, squeezing, rolling &c., called "washing the butter" I need not speak Enough to say, that to make good butter in that way was an "art" which every one did not attain.

And this fact, Mr Editor, is for the reading of those too young to look back to the days where the standard of butter was a very different thing from what it now is.

I have seen the question asked can frozen cream be made into butter? In one case the answer was "no". In another "yes". And in another. "It is very difficult to make butter from frozen cream." And strange enough only the last answer is the incorrect one, truly. No! Butter cannot be made from frozen cream, while frozen. And as truly yes! butter can be made from frozen cream.

We have made butter from one cow, and all numbers to 25, and kept the milk under all conditions, and with every experiment to get the most money from it. We have kept it in an outdoor milk house in the side of a hill, in the cellar, in the ice house, in the pantry, in the snow, in the cupboard in the kitchen. In earthenware dishes, (always before 40 years ago, in tin dishes, in large open pans, and in creamer cans submerged in ice-water. But the simplest and most economical, and the most perfect system to raise the cream, and at the same time destroy the taint from feeding turnips, &c., and to make first class butter, there is no way like freezing the milk

I am aware that the great care is, and which is echoed in every dairy journal "keep the dairy room just above freezing." In regard to such directions for a large dairy I have nothing to say. This is written for the convince ment of those, and there are many, who, from November to May have but a few quarts of milk each day, and who find a difficulty in making good butter from such a small daily quantity of milk. The final result often being that "the butter won't come" easily, and then generally of poor quality, and no two churnings alike, either in texture, colour, or flavour, and sometimes only bitter grease.

In the first place it may be observed that milk does not, at the same temperature, freeze hard like water. It is more porous, so much so, that the cream rises thoroughly after the milk is frozen. The general rule then is, "keep the milk *below* the freezing point." Lower than about zero makes it too hard, and more difficult to take off the cream, and the milk will force up and mix with the cream. If by mischance it is allowed to become too hard, it must, before creaming, be brought into a room with a higher temperature. The creaming can be done very quickly with a large iron spoon. In 24 to 36 hours the division between the milk and the cream will be very decided, and a greater quantity of cream than by any other system. We use common tin pans. The cream should be kept from thawing until the whole quantity required for a cheesing is collected, the cream tub should then be put in a warm place to thaw. Do not forget to stir it among the first things in the morning, and the last thing at night, and several times during the day. By proper attention it thaws in a short time, and no part will begin to ripen until it is all thawed. Consequently, it will be observed that it will all be as fresh as if from the same days milking. The popular taste demands butter of a certain colour, which must be had by nature or art. But give us the colour as it comes from the cow fed on *green* hay, in connection with roots and meal. If colouring must be used, the proper time to add it has now arrived. If there is a desire to hasten the ripening, a little buttermilk added will have that effect. The sufficiency of ripening will be reached when the mass is like thick cream. of a velvety appearance, and slightly acid. To churn easily, and to get the full amount of butter from the cream, the air in the room, the churn, and the cream ought to be about 65 degrees, and up to 70 if the cows are long calved. When the butter "breaks" the temperature ought to be lowered with cold water, sufficient to prevent the globules from massing together. The churning ought to be stopped when the particles of butter are the size of wheat or smaller. The milk is thus run off, and ice water dashed on the butter to rinse the buttermilk from it. Now, cover the butter with water, and in a few minutes run it off, then throw in a dash of water to rinse it, and if everything else has been properly done, the butter is thoroughly washed. After it has thoroughly drained, weigh the butter, spread it evenly with the paddle on the butter board sprinkle the salt evenly on it, from half an ounce to an ounce per pound, to suit the taste, turn up the edges sufficient to mix the salt, and after standing a few hours it is ready for print or tub.

It is of little consequence what kind of churn is used, the object is to break, and dash the cream about and the one that accomplishes that object best, is the one to use. We have tried many different kinds, and now use a box churn with the necessary airpipe, but there is really nothing better than the old fashioned up and down dash churn, with a hole just above the bottom to allow drawing off the buttermilk, and washing water, and a faucet