

cheap a cost as through a good agricultural paper. The FARMER'S ADVOCATE, as Prof. Shaw says, is doing a grand work for the farmers in this respect, and I think, with him, that it is but right that we should let the staff of such a paper know that we appreciate what they are doing for us. The farmer of the 20th century must be progressive, must learn how to produce the maximum amount at a minimum cost, must supply nothing but the best quality of goods, in order to get and hold trade, and must be honest and straightforward in all his dealings. By sticking as closely as we can to these four rules, I think we need fear no nation on earth when our agricultural interests are at stake. I often think we might help each other more by telling of our successes, along certain lines, through the columns of some widely-circulated paper. Before concluding, however, I wish to draw the attention of my brother farmers to two books that should be in every home, viz., "Successful Farming" and "Veterinary Elements," the former by William Rennie, Toronto, late of the O. A. C., Guelph, and the latter by Prof. A. G. Hopkins, late of Wisconsin Agricultural College, but now of the FARMER'S ADVOCATE staff, both practical books by practical men.

Wentworth Co., Ont. FARMER.
[NOTE.—"Successful Farming" and "Veterinary Elements" can be obtained through the FARMER'S ADVOCATE as premiums for securing three new yearly subscribers for the former and two for the latter.]

Description of Pigpen.

The size of my pigpen is 30x50 feet, with 9-foot wall, boarded horizontally on the inside and out, with tar paper and shingles on the outside, shingles put five inches to the weather. There is a fall of four inches on the floor of each pen from outside to passage, and there is a gutter on each side of passage with a fall of about six inches from feed room to west end to carry off water. The troughs are one inch from floor, to let water run underneath. There is a swinging door over each trough, two feet wide, with a button on it to fasten on either side of trough. There is a door from passage into each pen, through which they are cleaned. The manure is wheeled out through the door in west end, and the water from gutter runs into manure pile. B in cut represents the bed, which is raised up the width of a scantling from floor. D represents door; W, window; S, stove or feed cooker; P, pump or well. The doors in the end are three feet wide, and those in the sides are small and slide up and down on the inside, with a rope fastened to the top of each and run through a pulley at ceiling and from there to passage, so that they can be opened and closed readily. The ceiling is eight feet high, boarded on the bottom side of joist. The loft is for straw. The feed is mixed in a box that holds about a barrel. There are three small eight-inch wheels on the box, and the feed is wheeled down the passage and fed to pigs.

I feed my pigs on boiled roots and chop in winter. I boil the roots in the afternoon and mix them with chop when boiling hot in the evening and let it stand over night in the feed box with a tight cover, and feed it next day when it is warm. In summer I have two fields of about two acres each, one on each side of pen, and I sow grain in one field one year, and seed it down to red clover and pasture pigs on it the next year, so that I have a fresh field every spring for pigs. I used to pasture each field for two years, but it did not give satisfaction, as red clover does not seem to be of any value for pasture after the first year. Now I pasture the fields year about. I have never missed a catch of clover yet. J. K. LIVINGSTON.

Bruce Co., Ont.

An Illinois Sugar Beet Grower's Experience.

The growing of beets for sugar promises to receive some attention from Ontario farmers who are not yet conversant with its requirements. The experience of American growers is therefore of value at this time. Mr. John Bennett, a sugar-beet grower, of Canton, Illinois, grows beets successfully on sandy loam, growing buckwheat or clover on the land during the years between beet crops. He manures with farmyard manure in the fall before plowing for the beets the succeeding spring.

He grows his beets in drills and trims them by hand. He harvests them in October with a pronged plow. Mr. Bennett grows 25 tons of beets for acre, and estimates they cost him \$15 per acre, and gets \$1 per ton on cars two miles from his farm.

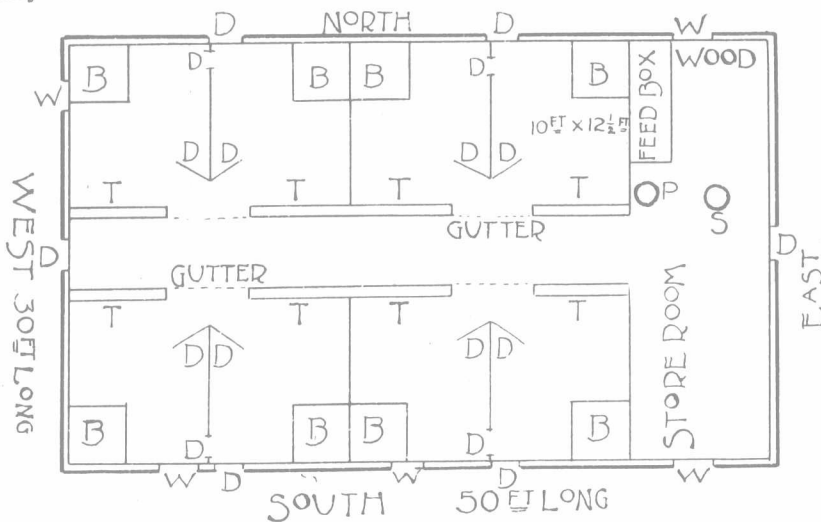
Farmers will do well to consider the question of sowing some mixed grains for green feed for the cows in the dry time which is pretty sure to come some time during the summer months. A patch of fodder corn to come in a little later will be found to pay well, and if it is not needed for fall feeding, it will be all right to store for winter use.

DAIRY.

Necessity of Co-operation Between Farmers and Merchants.

As the dairy business in this country grows, the necessity for greater attention to all the details becomes more apparent. For many years the farmer had to be content with low prices, and that only in exchange for the wares of the country storekeeper in return for his product. However, since commercial men learned the advantages of exporting butter, the price paid the farmer has gradually increased. To-day he receives a good remuneration for his butter and cheese, but it is very doubtful if he is satisfied. I do not wish to assume that the farmer asks any greater compensation for the result of his labor than those engaged in other avocations, but, nevertheless, it is necessary that the farmer give more thought to his product than merely manufacturing it to unload on the merchant at the best price he can procure. He should consider his product must be carried to the larger markets at a considerable cost of transportation, storing and selling. Then it comes into competition with the output of the dairy farmer from other countries, and it is here that some of the difficulties arise. Apart from producing good goods, the question of remuneration to the commercial men, the railway and steamship companies is of vital importance to the farmer. The profits to these must be paid either by the producer or consumer, according to the supply and demand. But it is to the buyer of his produce the farmer looks for his returns. There is one noticeable difference between the farmer and the merchant: The farmer is at a disadvantage in that he does not come directly in contact with the business world in the same way as does the merchant. Consequently, he grows less sympathetic in the matter of profits and losses among dealers, and too many farmers do not appear to realize that losses must in time have an effect on the producer.

The first essential, then, in the business is the manufacture of a superior article. With all the modern machinery, and the opportunities to be



PLAN OF J. K. LIVINGSTON'S PIGPEN.

come familiar with buttermaking, there is yet too much, not low-grade, but what merchants term store butter. It cannot be properly called a table delicacy. To my mind the greatest difficulty in the way is the objection the farmer makes to a fair criticism of his product. If no objectionable feature in his butter is apparent to himself, he straightway declines to listen to any objection from anyone else. There is no doubt but this condition of affairs has been caused by the country merchant, who usually—at least in the past—paid a certain price for butter, without any regard to quality, giving in exchange dry goods, clothing, hardware, boots and shoes, groceries, etc. If he lost on Brown's produce, he made it up on Jones'. At any rate, he had his profit on the goods sold from his stock.

In all things having a commercial value there is at times a constant fluctuation of the markets, and it is none the less in the butter business. Every honorable merchant, if he means to make a success of his business, must pay honest prices for produce of this kind. If he pays it in cash, to do justice to all he must carefully grade all the butter he buys. So long as the market is rising and each customer's butter grades No. 1, everything is lovely, but the moment a reverse sets in, farmers begin at once to procure evidence of the change. It is deplorable to notice the lack of faith existing between the farmer and the merchant. It is here where sound business principles are put to the test. If the merchant is not paying honest prices, the farmer is quite justified in passing him by, but he should exercise judgment in these matters.

The commercial man, like the potato bug, has come to stay. In fact, the butter business would never reach even ordinary dimensions without him. If those engaged in its manufacture wish to make this branch of agriculture grow, co-operation with the merchant is absolutely necessary. Every interested farmer should use his energies in preventing anything going on the market that is not strictly first-class. Then, and not till then, can we hope to attain the enviable reputation the butter business of this country is capable of attaining.

BETTER MERCHANT.

Something About Percentages of Butter-fat.

An agent for one of the popular makes of cream separators once said to the writer: "What surprises me most in my business is to hear a farmer say, when you tell him of the loss he is suffering by not having a cream separator, 'Oh, any butter that is left in the skim milk is good for the calves.' Thousands of farmers," said he, "make this excuse, but when once they are convinced that their loss is too great to be any longer borne, nine out of every ten jump to the other extreme and want and must have a cream separator that will take the last particle of butter-fat. Of course, if the agent thinks his story will go down, he usually assures the farmer that his machine will take out *all* the butter-fat. An experienced dairyman does not expect to get *all* the butter-fat, as he knows that no separator made will skim to .0."

Seven cows is probably as many as the average farmer keeps on a 100-acre farm. Their milk will average, perhaps, 125 pounds per day, for nine months in the year. I am speaking of the average farmer and average cows. Suppose the milk tests 4 per cent. Now, say that the average loss of butter-fat, by using either shallow pans or deep-setting cans, is 1 per cent. left in the skim milk. This estimate is not too high, and means a loss of 14 lbs. of butter-fat, or about 1 lb. 6 ozs. of butter, per day, the water and casein in the butter being accountable for the difference between the amount of butter-fat and butter. Multiply the amount of butter thus wasted, or, rather, fed to the calves (about 370 lbs.), by the average price at the local market, and see how much the loss is in cash. The farmer is approached by an enterprising separator agent, who figures out the loss of cream on the above basis, and offers to sell him a machine, that will take out *all* the butter-fat and prevent *all* the waste, for say \$70. Now, the farmer skims his milk with the separator, and he and his wife and daughters are all pleased at the easy and speedy manner in which the dairy work is done. They set a can of skim milk over night, and are more pleased than ever to find that not a particle of cream has risen. In the course of a few days a rival separator agent calls and claims that he has the only reliable cream separator, and that he can show by the Babcock tester that his separator will give the farmer more butter than any other. Of course, being a better machine, it costs more money—say \$100. Agent No. 2 puts his machine into competition with the first, and brings along a Babcock tester to demonstrate that he has the better machine. But before No. 2 gets his apparatus out to the farm, agent No. 3 has heard that farmer so-and-so is going to buy a cream separator, so he loads his into his rig and drives to the farm. The bewildered farmer finds himself confronted by three men, all claiming to have the best machine. No. 1 has a machine, at \$70, that he claims will take out *all* the cream; No. 2 has one, at \$100, that will take out more than any other; and No. 3 has one, at say \$80, which he claims is the best all-round machine. Let us assume that a skimming test has been fairly conducted between the three machines, as described above, resulting as follows: No. 1 machine, price \$70, skims to .1 per cent. This means that there is left in the skim milk 1 lb. of butter-fat in 1,000 lbs. of milk. No. 2 skims to .03, which means that there remains 1 lb. of butter-fat in 3,333 lbs. of milk. No. 3 skims to .05, which means 1 lb. butter-fat in 2,000 lbs. of milk. Now, assuming that the machines are equal in mechanism, capacity, ease of operation, cleaning, durability, and appearance, that the different firms are all located in Canada and equal in stability, and that the cost and convenience of getting repairs are equal for all the machines, according to the above test which machine ought the farmer to buy? He has in one year 33,750 lbs. of milk. In this amount, No. 1 machine will leave 33 lbs. of butter-fat, worth say 20 cents per lb.—\$6.75; cost of machine, \$70. By using No. 2, his loss is about 10 lbs. of butter-fat, worth about \$2.03; cost of machine, \$100. No. 3 would leave 17 lbs. of butter-fat, worth \$3.40; cost of machine, \$80. The difference between the earnings of No. 1, at \$70, and No. 2, at \$100, is \$4.75 per annum; difference in price \$30; time required to earn the difference in cost, about six years and two months. The difference between the earnings of No. 2 and No. 3 is \$1.40 per annum; difference in price, \$20; time required to earn the difference in cost, about 14 years and three months. But it is only fair to allow interest on the difference in the cost of the machines. This means, between No. 1 and No. 2, \$1.80 per year, which must be subtracted from \$4.75, the difference in their earnings, which really reduces the net difference in their earnings to \$2.95, in which case it would take No. 2 almost ten years to earn the extra \$30 it cost. And as between Nos. 2 and 3, allowing \$1.20 per annum for interest, there would be only 20 cents to its credit at the end of each year. It would therefore take till the end of the present century for it to earn the extra \$20 it cost.

I wish to say, in conclusion, that the keen competition existing between rival firms has caused the old style of separator, which could not be depended on to skim closer than .2 or .3, to practically have passed out of existence, and we can now depend upon getting machines which will equal the figures here given. It therefore becomes not so much a question of, is this the machine that will take out the very last globule of butter-fat, but is it the one that, other things considered, will give the best general satisfaction.

A FARMER WHO ALWAYS COUNTS THE COST.