

Some damage from the effects of grasshoppers, turnip fly and other insect pests is noted.

There is likely to be a scarcity of fruit this season, owing to various causes. The apple crop is light, but as a rule the quality is very good and the fruit fairly free from scab. Winter varieties promise better than early ones. Plums promise better than apples. They will be abundant in some places. The peach crop is reported to be practically a failure. Pear trees have not been so prolific as usual and the supply will be light. An abundant supply of grapes is looked for. Reports regarding honey vary very much. The average output will be about 25 lbs. per hive.

Reports regarding pastures vary greatly. In the Lake Erie and Lake Ontario counties pastures are generally dried up and bare, resulting in a considerable falling off in the supply of milk, with discouraging prospects for the keep of cattle during the fall and winter. In the northern and eastern portions of the province, where more rain has fallen, the pasturage has remained good with abundant supplies of milk for dairying purposes and prospects of a plentiful supply of feed for stock. Live stock as a rule are in good condition, with a marked absence of anything like serious disease.

The demand for farm labor is said to be decreasing, owing to the now frequent practice of doing all the ordinary farm work without other assistance than that furnished by the family, or the exchange of work among neighbors. This renders the supply of farm help in most localities fully adequate except during harvest. Great difficulty has been experienced in securing sufficient help during harvest. In many localities \$1 to \$1.25 per day with board seem to be about the standard or average wages for harvest hands, while for monthly engagements, with board, wages range from \$15 to \$20 per month.

Where Manure Will do Most Good

In some plants the farmer wants a large root, large stem and large leaf; and in others he wants only the seeds,—the other parts being an unimportant and secondary consideration. An abundance of plant food, an excess of it if you will, early in the life of the plant, makes for the growth of roots and stems and leaves; and then after the plant is about full size, some difficulty in getting more of it, makes for the growth of seeds. If a man wants large turnips let him pile on the manure. You never saw too much manure on a turnip field, for the size of the turnips. That is quite unlike the bunch of oats on the dung-hill. Then you never saw a hay field over-manured, so far as the growth was concerned. In the hay you want the stem and leaf; and in the turnip and mangel and carrot you want the root; therefore, manuring is the right thing for them. Besides their period of growth and accumulations extends many weeks after the period of collection by ripening cereals has ended; and that at a time when the farmyard manure applied that season is most readily available; and when nitrification in the soil is most active.

There is a fundamental principle to guide in making a rotation of crops,—apply manure only for green crops and hay; and follow these by cereals sown in soil having a very fine tilth, since for them there is only a short growing season. That the first part of it should be favorable is most important for the yield of grain.

Application of farmyard manure directly for grain crop is almost always a wasteful practice, but put on for root or other green crops it puts and leaves the soil in the best condition for grain crops to follow. I do not contend for sowing grain on poor land, but for putting manure on for green crops and for grass and for hay, which take all the nourishment they require; and leave enough, and that in the best condition, for the growth of the succeeding crop of grain.—*Prof. Robertson before Agricultural Committee, House of Commons.*

Building and Ventilating Cow Stables

At the last meeting of the Wisconsin Dairymen's Association Prof. King, of the Wisconsin Experiment station, gave a very interesting address on building, re-modeling, and ventilating dairy barns, from which we take the following, the illustrations being reproduced from *Hoard's Dairymen*:

"Next to a warm temperature in the stable, stands the demands for plenty of fresh air, supplied only by a good system of ventilation. A steam engine cannot be run without an ample supply of oxygen, neither can a cow do her best without plenty of fresh air. A man after he is through digesting his food and is at rest uses about 1,627 cubic inches of oxygen per hour, but 57 per cent. more of oxygen is required to simply do the work of digestion in the case of the man when he remains at rest.

Now what we are doing with the cow is to require her to digest just as much food as she can and convert it into milk. It is plain, therefore, that one of the chief requisites for this is plenty of fresh air.

On an average, a 1,000 pound cow will take something like 30 pounds of dry feed per day, and she will drink about 72 pounds of water. In other words, you feed her in the neighborhood of 100 pounds a day, but the amount of air that the cow must use in order to utilize the 30 pounds of feed and the 72 pounds of water is somewhere in the neighborhood of 192 pounds, or nearly double the amount of food and water combined. I wish to emphasize the importance of this matter of the abundance of fresh air, and in order that you may realize its great need more fully I shall perform a few experiments with this lighted taper and glass jar. (Prof. King here made several experiments, showing that a supply of oxygen was necessary to support the flame of the candle in the jar, and how easily and quickly it would be extinguished by pouring over it the air once breathed.)

Now to apply this principle here illustrated: The cows are standing on the floor of stable, the nostrils of the cow are so arranged that in her breathing the air thrown out of the lungs accumulates at the floor. From where, then, should the air be removed? From the ceiling? No. For there is where the air is best. Not only is the purest air at the ceiling, but that which is warmest also, for the bodies of the cows act as so many stoves in warming the lower air of the stable, causing it to rise and accumulate at the ceiling, and the heat given off by their bodies is sufficient to amply warm the stable, if it is rightly constructed and properly ventilated. If you introduce pure air from above, you bring the cold air in contact with that which has already been warmed, thus utilizing what would otherwise be waste heat, to warm the air before it comes in contact with the bodies of the cows. If the air is brought in in a large number of places around the sides of the stable, the tendency to produce a cold draught is reduced to a minimum, and the greatest heating effect is secured. Then if the bad air is removed from near the floor, the coldest air will also be removed at the same time, and the greatest advantage is derived from the heat liberated by the bodies of the cows, and they are kept better supplied with the purest air already made warm by the waste heat from their bodies.

The method of introducing the cold air at the ceiling and preventing the warm air from going out is represented on these two charts. Fig. 1 represents a frame barn built in the manner followed in ordinary house construction, where studding are used set three feet apart and the siding put on horizontally instead of up and down, as is commonly practiced in barn building. In the construction of small barns, this is much the more economical method of framing, as smaller timbers can be used and the siding does away with the necessity of braces, thus giving a much stronger structure with less lumber. Where this method of construction is followed the air may be allowed to enter the stable by passing in between the sheet-