

DISCUSSION.

Q. Is it the practice of the general fruit-grower in Germany to use commercial fertilizers largely?

A. So far as I could judge, they are used generally all over the country.

Q. What is the value of wood ashes?

A. Ashes are something like a pig in a bag. As a rule, good unleached wood ashes should contain 5 to 6 per cent. potash, though they have analyzed as low as 1½ per cent. It is a mistake to allow ashes to go out of the country. Potash, in the form of chloride or sulphate, costs 5 to 6 cents a pound. It is safe to say that the fruit-grower can afford to pay 5 cents a pound for the potash in wood ashes; thus, ashes analyzing 5 per cent. potash would be worth 25 cents per cwt. for their potash alone. In addition, they contain 40 to 50 per cent. of lime and a little phosphoric acid. Taking everything into consideration, good ashes are a safe investment at 12 cents per bushel of 60 pounds. The value of wood ash depends quite largely upon the particular kind of wood, some kinds of trees yielding an ash much richer in potash than others. The soft woods, as a rule, make a light, fluffy ash. Hence, it is more satisfactory to buy by weight than by measure.

POINTERS.

Muriate of potash should not be used for potatoes when quality is a consideration. Some other form of potash—for instance, sulphate of potash—should be used for this crop.

Apply potash early in the season. Manures and fertilizers can be of use to the roots of a plant only as they branch out and take up what has been distributed through the soil.

It is better that bone meal should be ground quite fine.

Q. What about the use of raw, ground rock-phosphate?

A. I would not hesitate to use raw ground rock-phosphate on a soil rich in humus. Untreated rock-phosphate is not readily available, but application of it may be all right as a means of getting a reserve supply of phosphorus in the soil.

A. W. Peart—I have three acres of grapes on a sandy, gravelly loam. Once in five years it has received an application of barnyard manure, the rest of the time 200 pounds muriate of potash per acre. The last time I used sulphate of potash, thinking possibly the sulphur might tend to reduce the mildew in the vineyard. Whether it did this or not, the general results of the above system of fertilizing that grapeery have been good.

Q. What about the value of rotted, as compared with fresh manure?

A. The greatest fertilizing value is derived from manure immediately applied to the land. There is something beneficial in manure beyond the fertilizing constituents contained. It is supposed that the application of manure introduces into the soil bacterial activity which assists in the liberation of other plant food already in the soil. In any case, manure has a good effect on the physical condition of the soil.

Q. What about the relative value of manure from different classes of stock?

A. In full-grown animals, 90 to 100 per cent. of the phosphoric acid, potash and nitrogen in the grain consumed goes into the manure; with young animals and cows, perhaps not over 60 per cent. goes back. Manure from fattening animals is thus more valuable than that from young and growing ones.

A member referred to some experiments with raspberries in New Jersey, in which one dollar's worth of manure gave a return of \$6 in fruit, while one dollar invested in commercial fertilizer gave a return of \$15.

Prof. Harcourt—The Germans have found that vegetables made better use of barnyard manure than did fruits. However, one may get fertilizer experiments to tell him almost anything he likes.

Q. What about the effect of fertilizing on color of fruit?

A. In a general way, the experience in Ger-

many seems to have been that, when they have abundance of potash and phosphoric acid, they are much surer of color than otherwise. Plenty of exposure to sun is also important.

Model Orchards in P. E. Island.

The attempts of the Provincial Government in Prince Edward Island to promote orcharding seem to have been attended by uncertain results. The enthusiasm appears to have died as soon as the orchards were planted. It is claimed that the Government had agreed to attend to the cultural operations, but instead this work was left to the owners of the farms on which the orchards were set. All but two of the orchards were neglected, and the net result is that the model orchards have been a hindrance rather than an aid to horticulture.

In dealing with one of the two orchards that were well cared for by those who owned the land, Prof. Theodore Ross, of Charlottetown, writes:

"In 1903 a model orchard was set out on the farm of John A. Annear. It consisted of 2 Northern Spies, 3 Astrachans, and 5 each of Baldwin, Wealthy, Gravenstein, Ontario, Stark, Ben Davis and King varieties. The soil, which had been well prepared the previous year by bearing a crop of potatoes, was a sandy loam, and sloped gently to the south-west. A strip 4 feet wide on each side of the rows has always been kept clean till about the middle or last of July, when cover crops of different kinds have been sown. Up to the present 5 Baldwin, 4 Stark, 4 Gravenstein, 2 Ben Davis and 1 King have died, and have been replaced by 5 Northern Spy, 5 Wealthy, 5 McIntosh Red and 1 Peewaukee.

"Owing, perhaps, to the shelter on the north, this orchard has been badly injured by sunscald. All varieties have been found to be not equally subject to it. In order of resistance they stand, King, Astrachan, McIntosh Red, Ben Davis, Spy, Wealthy and Ontario. The Baldwins and Gravensteins were winter-killed, and the Ontarios were frozen back very badly. The Starks died the second year; probably they were too much dried out before planting. The King was killed by the oyster-shell bark-louse.

"The Astrachans, Ben Davis and Wealthy are making the best growth, while the Kings and Spies are making the slowest. Only the Astrachans and the Wealthies first planted have yet come into bearing. The former have produced a few for each of the last three years, while the latter have borne about 1½ bushels per tree this season.

"This orchard is having an excellent effect on the surrounding community, and already many trees have been planted in the neighborhood, and orchards that have been planted are receiving better care. Chief McNeill, of the Fruit Division, says, in his report of a meeting held in this orchard: 'It is a pleasure to report the very great interest taken in orcharding in this neighborhood.' The value of the meeting was greatly enhanced from the fact that it was held in an orchard which may be pointed to as a model worthy in every respect of the best fruit-growing districts in any of the Provinces."

Niagara District Fruit-growers' Problems.

TRANSPORTATION GRIEVANCES.

It was clearly brought out at the annual meeting of the Niagara Fruit-growers' Association, held in Grimsby, Ontario, on January 14th, that growers and shippers have cause for complaint in regard to the way their goods are handled by the express companies. Considerable evidence was submitted by a large number of the members, which goes to show that the general rates are unreasonably high; that there are many irregularities in the tariff, and that considerable pilfering is done to fruit in transit, particularly at small places. These matters have such an important bearing on the fruit industry that it was decided by the association to take immediate steps with the object of securing redress if possible. Con-

sequently, a committee, composed of representative growers and shippers from the Niagara district, was appointed to meet with representatives from the Ontario Fruit-growers' Association, at Toronto, on January 15th, and present their grievances before the Railway Commission.

The meeting on the 14th was largely attended, it being the first annual meeting of the association since its reorganization a year ago. W. H. Bunting, President of the Association, in his opening remarks referred briefly to the growth and influence of the association, and touched upon the chief point at issue, the tariff of the express companies. This point was further enlarged upon by E. D. Smith. One grievance of the growers, he said, was the inequality of the tariff. In many instances there was a difference of 50% in the rates between places equal distances apart. The chief grievance was, however, the unreasonably high rate charged. "There should be a general reduction all round," he said. "We have no grounds for asking for a general reduction in rates. We believe them to be too high, yet the company claim they are not making more than 6% profit at present rates. Considerable of the public money has been expended in the building of railroads and inaugurating express systems, and, consequently, they have a right to good and reasonable service at the hands of the express companies. It should be the duty of the railway board to investigate and find out if the express companies can afford to lower the rates." Another grievance pointed out by Mr. Smith was the losses resulting from causes believed to be in the control of the railway companies. We should insist upon a ruling, he said, in presenting our case before the Railway Board, that the company be made liable for the destruction of fruit delayed in transit.

President W. H. Bunting, speaking on this matter, stated that one result of the high express rates was that growers have been obliged to send goods in carload lots to large centers, to the detriment of the smaller places, and loss to the express companies. It was pointed out that as far as our Western trade was concerned we could compete with California in those fruits that could be shipped by freight. In respect to peaches and other more perishable fruits, that had to be shipped by express, we could not compete in the Western country owing to the high express rates.

Mr. Thompson, of St. Catharines, referred to the pilfering of fruit in transit, and the lack of accommodation and shelter at many shipping points. A number of growers submitted testimony regarding pilfering, evincing a willingness to furnish such evidence before the board if necessary.

Major H. L. Roberts pointed out that the 6% profit referred to by the company probably covered the whole business of the company, and if so the profit on fruit alone would exceed this figure. Another point brought out was that the present rates, which were fixed a number of years ago, included the returning of empties to the shippers. This was not done now by the companies. Again, owing to more compact packages now in use, space in cars could be used more economically now than formerly, the capacity of cars being thereby increased. Evidence of the inequality in rates was furnished by some St. Catharines growers, who stated that they had a 30-cent. rate to Toronto, whereas the rate from Winona and Grimsby is 40 cents a hundred.

The committee appointed to place the case before the Railway Board was named as follows: F. A. Goring, A. E. Kimmins, T. H. P. Carpenter, Murray Pettit, J. M. Metcalf, J. W. Smith, H. Burchholder, W. Hendershot, H. Fleming and H. L. Roberts. In order to strengthen their position, they were backed up by the following resolution, expressing the feeling of the meeting: That in the opinion of this meeting it is desirable that every effort be made to bring to bear upon the Railway Commission the importance to the industry of the following points: 1, Reasonable express rates; 2, graded rates in larger shipments and car lots; 3, that pilfering and rough handling be eliminated; 4, that responsibility regarding delays be fixed, also a proper method of settling just claims within a reasonable period; 5, that proper accommodation, both as regards cars and shelters at points of shipment, be provided.

A resolution respecting a regular grant to the association was passed, in effect that the President, Secretary, C. E. Fisher and E. D. Smith, be a committee to interview the Minister and endeavor to get a suitable grant for educational purposes. The amount named was \$300. This grant is to be used in securing speakers for the annual meetings in March.

EXPERIMENTS WITH SPRAY MIXTURES.

A spray committee, appointed at the last annual meeting, to experiment with the Cooper's fluids and commercial lime and sulphur, reported quite favorably on Cooper's fluids, particularly the V1. It had killed the scale in peach trees that were marked for destruction without doing any apparent injury to the trees. Different results, however, had been secured by A. H. Pettit. He had used the V1 on peach trees while dormant, and had noticed no particular advantage. He then applied the V2 solution on May 1st, and



General View of a Prince Edward Island Model Orchard.

REPEATED