

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

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is full of wide-awake, intelligent fruit-growers, but although hundreds of the nests have since been found, no one in Nova Scotia discovered the insect, until C. Percy Foote sent specimens to Dr. Fletcher, hundreds of miles away, at Ottawa. After this, let no one doubt the value of scientific experts to agriculture and to the country. Incidentally, let farmers and others cultivate the habit of observation, and when a new insect or plant is discovered, or a strange disease manifests itself, take no chances, but send it, or at least a description of it, to someone who knows. "The Farmer's Advocate" is always willing to advise, and services of the foremost experts in the country are ever at our call.

THE WASTE OF MANURE.

According to Prof. Cyril G. Hopkins, of the University of Illinois, the waste of barn manure in the United States amounts to three-quarters of a billion dollars a year. Careful estimates by the U. S. Department of Agriculture show that the 180,000,000 domestic animals produce annually two and one-third billion dollars' worth of manure, of which at least one-third is wasted. Putting it another way, the average American corn crop for the past ten years has been two and a quarter billion bushels, and the manure wasted is equal to the value of this whole crop at 33 cents per bushel. The \$75,000,000 worth of commercial fertilizer used in the Republic each year is equal to only one-tenth of the annual waste in farmyard manure. And yet, with this stupendous economic loss constantly facing them, there are farmers—never the best ones, either—who will say they are farming as well as it is possible to do, and that the study of soil chemistry is a fruitless search. It is hard to convince a man who does not wish to learn.

In Canada, be it said to our credit, there is less waste in the handling of farmyard manure than across the line. We suspect, however, that

if the truth were known, the loss in this country is not far short of one-third the potential value, if we were to count leaching and washing in the field as part of the loss. Not all this waste can be eliminated by the most thrifty methods, but there is a grand opportunity to reduce it, and the knowledge that it is constantly going on should cause us to think, and think hard. Underdrainage of fields, cement floors in stables, water-tight barnyards, manure spreaders, and prompt application to the land, are essentials in the utilization of manure to the best purpose, and with a minimum of loss.

CO-OPERATION: A NEW ERA IN ORCHARDING.

Co-operation is no new thing on Canadian farms. The pioneers, finding that twenty men working together for one day at clearing land, could do more work than one man working alone for twenty days, co-operated in logging bees until the necessity for these passed. They still co-operate for threshing grain, for dairy work, and to less extent for other purposes. There is no special virtue in co-operation, except in certain lines of work. These lines, however, Canadian farmers do not quickly recognize. They apply co-operative methods to some extent in butter and cheese making, but not to the production of bacon. The Danes, our greatest competitors in butter and bacon, co-operate with great success in the production of both. In both industries there exists the necessity for larger quantities of the finished product of a uniform grade, and also the necessity for greater economy in production.

Necessities were met in Canada largely by a semi-co-operative system for cheesemaking and for the production of bacon by a factory system, owned and managed exclusively by capitalists in no way engaged in the production of raw material. Both systems are developing in the apple industry, as the result of a slight difference of conditions in different parts of the country. The most important feature of the new development is a central packing-house system. In some cases capitalists own and manage central packing-houses, though they are in no way engaged in the production of the fruit. The purely co-operative apple packing and selling associations of Canada had their origin in the south-western portion of the Province of Ontario, and the application of the co-operative method came in the way of a natural development, arising out of the condition of the industry in that section of the country.

The foregoing paragraphs preface a bulletin on "Co-operation in the Marketing of Apples," by A. McNeill, Chief of the Fruit Division of the Dairy and Cold-storage Commissioner's Branch, Dominion Department of Agriculture, a bulletin so full of meat that to summarize it seems an injustice. We shall have occasion to quote it freely from time to time. Meanwhile, it is enough to note in a cursory way the various points discussed.

Apple culture in Ontario began with small plantations of many varieties, which to-day aggregate between 6,000,000 and 7,000,000 bearing trees in Southern and Western Ontario. For some time local markets absorbed the surplus, at profitable prices, but about 1865 to 1870 the pressure of overproduction began to be felt, and apples became almost valueless. Then began an export trade, which has gradually mounted to \$4,000,000 or \$5,000,000 annually. Buyers bought the apples on the trees, and organized gangs of packers, who proceeded from orchard to orchard. Orcharding again became profitable, and new plantings of commercial orchards were made, especially along the northern shore of Lake Ontario and on the shores of Georgian Bay. When these came into bearing, accessible foreign markets began to feel the pressure of increased supply, and when the phenomenal Canadian and American crop of 1906 was put on the market, prices again slumped. In the old districts of numerous, nondescript small orchards, conditions became generally bad. It is estimated that in the neighborhood of 7,000,000 barrels were wasted in Ontario orchards in the year 1906.

Necessity commands invention. Bad conditions lead to their own remedy. An earnest inquiry

into the situation was made by both Governmental and private authorities to determine why planting should proceed with vigor, as it continued to do, in one part of the Province, while in others trees were being chopped down. It was found that the requirements of the foreign market were being more or less adequately met by the newer and larger orchards. These requirements were four in number, viz.:

1. Larger lots of fruit.
2. Few varieties.
3. Uniform packing, grading and marketing.
4. The employment of skilled labor.

From here, Mr. McNeill goes on to describe existing systems of packing and selling, and discusses such points as, selling by the barrel; co-operation and the fruit market; the value of a guarantee; the pernicious practice of selling by commission; the ideal system of selling by tender; direct buying, and the introduction of the co-operative method in the southwestern portion of the Province, where conditions had become chronically bad. The original purpose of co-operative organization of Ontario apple-growers was to combine a number of small lots of fall apples into car lots for shipment, with the object of securing thereby a reduction in freight charges. But the idea has greatly developed, until it is now proposed to substitute for the ordinary methods mentioned above, co-operation in packing, as well as in selling, and even in power spraying and other phases of production. The following advantages will be gained by the adoption of co-operation:

1. Large stocks will be controlled by sellers who will act as a unit.
2. Uniform packing, grading and marking will be practiced.
3. A reputation associated with a permanent brand or trade-mark will be established.
4. The cost of picking, packing and marketing will be reduced.
5. Fruit will be picked and packed at the proper time.
6. Less common varieties will be utilized.
7. Storing facilities will be better provided for.
8. Direct selling at the point of production will be encouraged.
9. Packages will be bought in large quantities or manufactured on the premises, with a material reduction in cost.
10. The placing of the purely commercial part of the industry in the hands of competent men whose interests are connected with those of other members of the association.
11. Spraying by power outfit, co-operatively, will in most cases be adopted.
12. The manager and the better growers among the patrons will have every inducement to stimulate the less progressive members to better work.

These points are discussed in all necessary detail, and the appendix contains model constitutions and by-laws adopted by the Forest Fruit-growing and Forwarding Association, in Ontario; the Kelowna Farmers' Exchange (Ltd.), in British Columbia; and the Island and Gypsum Fruit Company, incorporated under the laws of one of the American States. Laws relating to the incorporation of joint-stock companies in Canada are explained, and instructions given to would-be organizers.

To the value of co-operative organization, let this fact testify: The members of the co-operative association in Ontario sold the greater part of their 1906 crop for \$2.25 per barrel. Many outside growers did not succeed in selling their earlier varieties at all, and on such sales as they did make, secured not more than \$1.00, equivalent to \$1.50, f.o.b. One apple-buyer reported that he had secured two thousand barrels in Southern Ontario at fifty cents per barrel. The only explanation of such absurd prices in such a season as last year, is lack of organization among the growers.

The thoughtful reader may inquire whether the co-operative system of selling fruit will be permanent, or whether the central packing-houses will eventually be taken over and operated by private capital, as so many cheese factories and creameries have been. It may be, but meantime co-operation, with its attendant advantages, is lifting the apple business out of the mire and placing it on its feet. It is bringing about a bright, new era, not only in marketing, but in methods of production;