

Co-operative Apple Growing.

(A paper read by E. B. Edwards, Peterboro', Ont., before the Ontario Fruit Growers' Association.)

I advocate the extension of apple-growing on the principle of co-operation which has already been found of so great advantage in other branches, and more especially, so far as farmers are concerned, in the matter of cheesemaking. This co-operation may be on a large or small scale. It may be only the friendly union of two or three farmers in a neighborhood, or it may include a township or a whole county, and it may apply to those who have only small orchards as well or perhaps even better than to those who have large ones, for the latter are generally able to take care of themselves.

(1) Co-operation may well begin with the gaining of knowledge on the subject. The two or three may make it a point to compare notes and exchange ideas and information, and the larger body may hold meetings and secure the presence of those who may be able to impart instruction with regard to the kinds of apples to grow, the best modes of growing them, and the best modes of disposing of them.

(2) As a second step, co-operation in buying trees for planting will secure the advantage not only of lower prices, by ordering in larger quantities, but also of greater attention to the order, the prevention of the petty frauds of the "tree peddler," and greater satisfaction in every way. If I want 50 trees and two of my neighbors want 25 each, each of us will gain by sending in an order for 100 trees at the lowest rates that are offered for that quantity. This is an obvious and immediate advantage affecting the pocket, and is one that is within the reach of a small number who may choose to unite, as well as of the larger number.

(3) When the orchard is in bearing, there may with advantage be co-operation in such a matter as spraying, where the size of the individual orchard does not seem to warrant the providing, by each one, of a proper spraying pump. Two or three farmers in a neighborhood may purchase a pump and provide the materials between them, or a larger number may arrange with a man who owns an outfit, to make a round of their neighborhood at the proper times. Many a farmer neglects to spray his orchard because he thinks it hardly worth while to get a pump for himself, or because at a busy time he does not want to be bothered with something that he knows very little about.

(4) When the apples come to be picked and marketed, there is not only a fresh advantage to be gained from co-operation in marketing them, but there is a summing up of all the advantages already gained, the test and the realization of the work of the earlier years. The knowledge and information gained, the prudent selection of varieties suitable to the locality and suitable for the market, the care in training the trees from the first year upward, the spraying, the tilling and manuring of the ground, are all telling upon the crop produced. If the kinds of apples have been carefully and judiciously selected to begin with, the co-operating neighborhood will become known for certain good varieties of shipping apples. If the trees and the ground have been properly cared for, and the trees have been properly sprayed, it will also become known for the quality of the fruit produced. Buyers will be attracted to such a neighborhood, and if an immediate sale be made to them better prices will be obtained on account of the uniformity and quality of the fruit, and that without any combination to keep up prices; or, if a shipment to the English or other market be determined upon, the advantage of co-operation becomes even more apparent. The man who has only one acre or two of orchard has not a sufficient quantity to ship by himself. By uniting their forces, two or three or a larger number may make up a carload or a larger quantity and thus secure the advantage of the greatly reduced rates applicable to the largest shipment. Having a larger quantity, too, there is an advantage of dealing with the commission agent and the better knowledge of the market.

(5) For windfalls and fallen fruit, co-operation may secure a joint evaporator. This is a matter of great importance, not only to provide a proper means of disposing of this class of fruit, but also to avoid the unwise course of glutting the market with poor and decaying apples, which disappoint both seller and buyer. This evaporator may be either on a large scale in a town or village, or may be a smaller one for a smaller neighborhood.

To sum up, I recommend the formation of county societies to bring together all those who are interested in the subject, at stated intervals, and to hold meetings for discussion and gathering information, and to work together as far as possible in the direction indicated. In addition to this, the apple-growers in a locality, even if they be only few in number, ought to be in touch, the one with the other, and assist one another in such matters as spraying and the like wherever necessary. My ideal would be to see ten, twenty or fifty farmers in a neighborhood meet together and form a "co-operative society," each one agreeing to plant within the next five years ten acres of orchard, the varieties to be few in number and all suited for shipment: to properly study and carry out the care of their trees, and when the time should come for fruit-bearing, to unite in sending their apples forward under their own brand to the English market, having their evaporator for the windfalls, and, if necessary, their central frost and heat-proof storehouse at the central shipping point.

Development of Plants.

BY GEO. BARTLETT.

If the seed of a plant be carefully examined, it will be found to contain a miniature plant. We see a small, rounded body which is nearly divided into two parts, connected at one end by a small, short stalk which seems to be fastened to both divisions. This little stalk is a sort of stem from which these divisions (Fig. 1-a, b) have grown. In the pea or bean, therefore, we see the embryo of the future plant. The small stalk (c) is the undeveloped stem and root. It is called the radicle; the swollen leaves are called Cotyledons. They are the undeveloped vines. The Cotyledons are swollen because they are stored with food for the young plant. It is its store-house in the same way as the root of the turnip, the head of the cabbage, and the tuber of the potato are the store-houses from which these plants draw their food supply while forming their seeds. As the plantlet grows, it draws on its food supply until it is used up. The Cotyledons then assume their proper thickness. This process may easily be traced by watching the Cotyledons on first leaves of the cucumber. While this is going on the radicle grows upward and downward. The upward extension becomes the stem; the lower becomes the root. So much for the development of the parts of plants. They are all formed from an embryo having the same parts. It is a plain fact that there are vast differences in the shapes of trees. What is the cause of this? Why is the pine a tall tree, and the apple a short, round-topped tree? This may be explained by a brief consideration of the different methods of branching. Branching is caused by the development of lateral or side buds. At the end of every perfect stem are formed side buds, and buds on the ends of the stems, or terminal buds. If for some cause the end bud only is developed, a straight, branchless stem is formed. If the side buds are developed and the terminal bud is not, a forked stem is formed. Let us apply this to the apple and the pine trees. In the apple, as a rule, the side buds develop. This forms a fork (as at a, Fig. 2). The next year the two side branches form forks in the same way (as at b, b). This process, repeated from year to year, gives the tree a branching, round-topped appearance. (Fig. 2.) In the pine the terminal buds develop rapidly, and grow at the expense of the side buds, which are consequently much less vigorous. This produces a straight trunk with smaller branches. The pine tree is, therefore, straight and cone-shaped. Many curious forms of branching are produced by peculiar developments of the buds. Sometimes only one side bud develops. If the buds on the same side of the stem grow every year, a structure is formed like that shown in Fig. 3. Sometimes one lateral bud develops one year and the other lateral bud the next year, and if a process of alternate lateral bud development be continued year after year, a zig-zag structure is formed, like that shown in Fig. 4. This method is called scorpion branching, on account of its resemblance to the zig-zag way in which a scorpion travels.

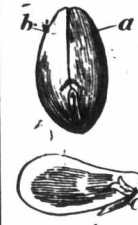


Fig. 1

Though all these figures show regularity of method, we see no such regularity in the trees themselves. Why is this? The fact is that nature follows these patterns; but there are other influences at work which mar the regularity of the design. If all the growing buds were permitted to develop, we should have the design regularly carried out, but many of the buds are destroyed. Some of them are eaten by birds; some are destroyed by frost, and some are starved to supply other buds. These buds often remain latent for years, and develop when a favorable opportunity occurs. Cases have been known when all the flowers of a tree have been destroyed by frost, but the tree was again covered with blossoms in a short time. This was owing to the latent or undeveloped buds, which were enabled to grow when their food supply was increased by the destruction of the buds which had hitherto been robbing them. This plan of nature, which provides more buds than can develop, is a wise provision, as it enables the tree to survive frosts and the ravages of birds and insects.

In trees or plants where the terminal bud is strongly developed, the lateral buds are often deprived of sufficient food supply and kept from developing. This is the case in spruce and pine. Latent buds are, therefore, quite common in these trees, which accounts for the knotty nature of their woods; thus the destruction of buds from various causes, and the failure of other buds to develop, destroys the originally perfect pattern, and makes it difficult to trace out the original design from examination of the fully developed plant.

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POULTRY.

The Poultry Association of Ontario.

The annual meeting of the Ontario Poultry Association was held in New Hamburg on the afternoon and evening of Thursday, January 3rd. The meeting was well attended by energetic breeders and showers of fancy and utility fowls. The testimony of old members was to the effect that this meeting excelled all previous ones in its practical teachings.

The address of the President, Mr. C. F. Ernst, contained some suggestions worthy of consideration. Owing to the healthy condition of the treasury, it was recommended that the Association purchase and own coops to be used for exhibiting birds, and that enough be supplied to furnish single coops for all who desire them, and that they be shipped to the place of holding the show from year to year.

Utility Better than Fancy Points.—President James Mills, O. A. C., to show the value of careful, well-conducted work, referred to a New York farmer who kept on forty acres 600 White Leghorn hens; he engaged a hired man and a hired girl, who did all the work above that done by the farmer and his wife. His horse stock consisted of three animals. Now, by careful work and marketing eggs every day, a business was worked up in New York City that paid him fifteen cents per dozen above the market price the year round. The secret is found in the fact that every egg offered for sale was not more than three days laid. Mr. Mills spoke of what he considered useless effort being put forth in the development of fancy points, such as feathery feet, to hold snow and moisture, and immense development of comb on other breeds, which required very warm quarters to keep them from freezing. These points should be considered of much less value than size and form, in the strictly utility breeds, such as farmers make money out of.

Housing Poultry.—Mr. Chas. F. Wagner, Toronto, furnished a valuable paper on the construction of a poultry house, and care of the birds. The location should be high and dry, and well sheltered. The building should be oblong rather than square, so that the hens get plenty of exercise and also more freedom and room at feeding time. The broad side should face the south. The roof is much better low than high—say 6 feet on high side, sloping to 4—in order to obtain the greatest amount of warmth. Mr. Wagner is of opinion that the roof should slope to the north, so as to hold snow to keep out the cold. But the consensus of opinion brought out in discussion favored a southern slope, so that the sun's rays should keep the roof dry, and thus warmer than if covered with snow or ice. The walls and roof should be made air-tight with building paper outside and in. The roosting-room should be frost-proof, and apart from the day or scratching apartment, which should be well lighted and littered with chaff or leaves, in which grain should always be fed. The cock bird should never be allowed with the hens except in the breeding season. This point was well discussed, which brought out the fact that eggs unfertilized will keep sweet and good an almost indefinite length of time, and that flocks without roosters will lay a greater quantity of eggs.

"Poultry-keeping on the Farm," by Mr. Dilworth, Toronto: On too many farms the hens have no care whatever, but are allowed to roost in trees and other cold places, and are fed, if fed at all, by having grain thrown to them at irregular intervals of two or three days. They are often alive with vermin, and chicken cholera and roup are no strangers to the flocks. The whole matter is just this: the hens are non-producers, and therefore condemned by their owners as being dirty, unprofitable stock. Now, just to look the matter squarely in the face. Would any class of stock or any line of business pay if so neglected? As general purpose fowls, Mr. Dilworth has found Plymouth Rocks and Wyandottes among the best sorts. These make splendid broilers, but should be hatched during March and April. Just here the use of an incubator was strongly recommended. For morning, feed boiled potatoes and shorts, fed warm; for noon, ground meat and bone, and for the evening ration, whole grain should be thrown among chaff to be scratched for. As soon as the hatching season is over, the cocks should be removed from the flock for reasons given above. Mr. Dilworth referred to the suicidal result of selling eggs of uncertain soundness, as is too often done. If good fresh eggs were the only ones sold, there would be a far greater demand than at present, at a much higher figure than is now paid. The fact is there are hundreds of city families who would gladly pay a high price the year round for perfectly fresh eggs. Now, really fresh eggs can only be obtained by regular gathering, and marketing within three or four days, if fertilized, or by removing the cock and keeping the eggs clean and cool until placed on the market. In the course of the discussion it was agreed that the Indian Game crossed with the Buff Cochins makes a splendid broiler, owing to their rapid growing qualities, plumpness, and yellow color of pin-feathers. Here again the incubator was recommended.

"Poultry on the Farm" was the title of an able and comprehensive paper read by T. E. Duff, a successful Toronto exhibitor. This paper contained many valuable suggestions. Fowls will pay more profit than any other stock, if given proper attention. Clean, wholesome food and pure water should be given regularly two or three times daily, accord-

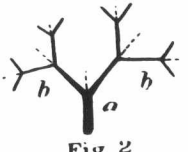


Fig. 2

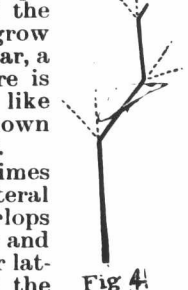


Fig. 3

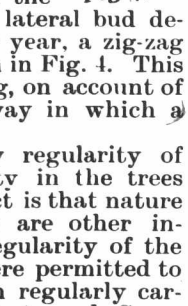


Fig. 4