

dormant pruning from planting time until bearing age is reached which will induce early bearing and at the same time produce a vigorous, mechanically strong, healthy tree, well shaped for convenience and economy in orchard management, capable of producing a succession of profitable crops over a long period of years. To determine, for the bearing orchard the method of pruning and distance of planting conducive to annual maximum crops of number one fruit, and longevity in the tree. (In determining longevity, length of profitable bearing, freedom from disease, etc., to be considered in addition to such data as weight and quality of annual crops.)

"The need of an extensive and carefully conducted experiment along the lines indicated is keenly felt by Ontario growers, who agree to disagree as to the proper method of pruning the peach. There is a growing feeling amongst experimental horticulturists, and growers also throughout America, that orchard trees in general should receive considerably lighter pruning until bearing age is reached than has been advocated heretofore. It has been proven at this Station, at several Experiment Stations in the U. S. and particularly at the Woburn Experiment Station in England, that, for apples heavy pruning not only retards the tree in its development of wood, but also greatly delays bearing. "The correlated problems of distance of planting and soil fertility have not, however, been taken into consideration in the apple pruning experiments. As a matter of fact they probably have not the same significance in the pruning of the apple as they have with the peach, with its ranker growth and totally different bearing habit. The bearing habit of the peach carries with it the necessity of providing for a continuous and ample supply of new wood. Heretofore this object has been accomplished by severe annual thinning out and heading back. May it not be possible to accomplish this same result by giving the trees more room, and allowing them to attain a greater size; stimulating new growth through moderate pruning (thinning out mostly) coupled with proper soil fertilization?

"Since light pruning while the tree is young allows of a greater tree development, this in turn presupposes the necessity of a greater distance of planting. Pruning, particularly heavy pruning, delays fruiting as already pointed out. Closely planted orchards, whether of peach or other fruits, require comparatively heavy pruning to prevent the trees from crowding. Bearing is then seriously delayed and in spite of the greater number of trees to the acre it is questionable whether such an orchard will produce as big a bulk of fruit as the more widely planted orchard with its earlier bearing, larger, stronger, healthier trees, and possible greater longevity. Healthier, because it has been observed that heavily pruned peach trees are more susceptible to diseases, particularly the peach canker. Wider planting would also permit of inter-cropping for a longer time and of easier subsequent culture including picking. It has also been frequently observed that where, through accident, trees have been allowed more than the usual distance, such trees tend to spread out instead of growing up so high in the air, a greater proportion of the fruit being borne within easy reach of the ground. More sunlight and a freer circulation of air with the wider planting would aid materially in the control of fungus disease.

"An excess of soil fertility promotes excessive growth. As long as there is rapid growth of the tree, fruiting will be delayed; for vegetative growth and fruit production are diametrically opposed. One is encouraged at the expense of the other. A slowing up of growth in a too vigorously growing young tree will tend to fruitfulness. This slowing up can be best accomplished by inter-cropping and thus depleting the soil of some of its fertility, or by allowing the trees to grow without checking by pruning, thus making the trees themselves establish a more moderate soil fertility. It is possible, however, that too unwieldy a tree may be produced in this way, with too much of the fruit so far from the centre of the tree as to induce easy breaking. Many young peach orchards are annually set on old strawberry land and other heavily manured soils. What pruning treatment should such orchards receive?

"It will be seen from the foregoing then that type of pruning must be studied in relation to distance of planting and fertility of the soil. The problems are interdependent and while the effect of varying degrees of pruning is known in a general way, yet there are many pruning problems still to be worked out with the peach. Also the value of experimental work lies a great deal in its practical demonstration. Seeing is believing. California might carry on an experiment similar to this and arrive at the same conclusions; and yet, though the results were given to Ontario growers, they would be infinitely slower to profit by these results than if they had been secured in their own province where they could also see the orchard if desired.

"Data from the experiment we have planned should be available at the end of five years as to the degree of pruning and soil fertility best suited to the young peach orchard. From that time on there should be a constant accumulation of data with respect to the best system of pruning to follow for the bearing orchard. At twenty years it is estimated that the closely planted orchard will pass out of profitable existence. This should normally complete the experiment though it will likely be advisable to retain the widely planted trees to determine their limit of profitable bearing.

"The results anticipated are that lighter pruning than that now recommended for the young trees will hasten bearing and at the same time give a larger, stronger tree, better able to carry large crops in later years. Also that the heavily manured trees will give the usual rank growth found in so many young peach

orchards, and which is usually heavily cut back to keep it within bounds thus greatly delaying fruiting; or if it is not cut back the trees soon crowd and the fruiting area is at the end of long bare scaffold branches which easily break when loaded. For rich ground it is therefore anticipated that a greater distance of planting will be found advisable. It is further anticipated that widely planted, moderately pruned trees will be longer lived than where either no pruning or heavy pruning is practiced."

POULTRY.

Poultry and Profit.

EDITOR "THE FARMER'S ADVOCATE":

Many persons have started with expectant hopes to keep poultry for profit, and, after some time spent in financing the incidental expenses, have given up the venture, blaming the birds for their failure. Poultry will, however, yield a nice sum if handled intelligently; and given a little time, capital, and thought, any person can make a success of it. The farmer who can raise on his farm all of the grain and roots needed for food, of course, has an advantage over persons who must purchase the wherewithal for the sustenance of the flock, but even considering the present high cost of supplies, intelligent co-operation of the poultry keeper with his birds will surely bring a profit. The way to success is to make every pound of feed tell in eggs or flesh. To do this, a vigorous culling of the flock is required, as well as good housing and care, business methods in buying the feed, and in selling the product. By culling the flock is meant getting rid of non-producers. No person on earth would think of keeping in their employ a person who will not work. And yet the poultryman will hang on to hens that will not, "deliver the goods," and then blame the hens because there is no money in them. It is not the useless hen's fault that she is kept to eat up the profit.

Now, when brooding time is at hand, is the right time to begin to keep poultry for profit. From the chicks raised during the present season, will be drawn the members of next winter's flock. And right now many can be culled, whose absence will make the funds grow larger. Keep for laying only those that will be likely to lay winter eggs or produce good, strong germed eggs for hatching in the spring. This means that in the heavier breeds, hens over two years old should be sold or eaten and only the best of the one-year-olds kept. Keep none of the late hatched pullets of last season. Early hatched, last season's, well matured pullets should be carefully selected, doing away with any that may lack vigor or constitution.

Pullets, to be egg producers for winter, should be April hatched. If well fed and cared for, these will begin to produce eggs in November, and keep it up throughout the winter months, giving perhaps three times the number of eggs that old hens can produce over a given length of time, on the same amount of feed. Any pullet that has not come to maturity by November, is likely to be a loss to the poultry keeper. Such pullets will probably not give eggs until February thus eating up the profit. Feed all such birds with the cockerels and fatten them well (because thin fowl do not bring good prices) and market them as soon as possible. Do not keep old hens. If any have been mistakenly carried over winter, get rid of them now.

In selecting the one-year-olds to keep for breeding, pick out those that moulted late last fall. Those that are in full, new feather in November are not the layers. Keep the poultry houses clean, and give a coat of white-wash as often as possible to obliterate vermin. Stop all cracks to do away with drafts and have all openings to the south. Allow the birds to get plenty of fresh air and sunshine. Do not allow dogs to prowling about the runs and excite the fowls. Every time the hens get frightened, egg production lessens; thus it means a loss of money. Use judgment in selecting feed, and give what the birds will eat clean and no more. Feed a mixture of grains in the litter morning and night. In the mash, dry or moist, use bran, shorts and ground oats. If you have sour milk, give it to the hens to drink, and failing this, use beef scrap. Some farmers say there are no beef scraps available, but the local butchers will be glad to sell the lights and other portions of animals now being wasted. This, boiled with a little salt, can be given to the hens. It is not necessary to waste time cutting this sort of meat up. Place a piece of it in a clean trough and the hens will soon do the rest. Keep all utensils used in feeding as clean as possible; give plenty of shell and grit; and do not allow the hens out of doors in wet weather. If kept under the above conditions, profit will surely accrue from the flock.

With newly hatched chicks, some persons feed them too soon and nothing is more sure to kill them. The baby chick brings with it out of the shell, nutriment for the first two or three days, consisting of the yolk of the egg from which it hatched, which has developed its tiny intestines. The first feed for chickens, can be bread crumbs moistened slightly with a little warm, sweet milk, or some coarse flaked, dry rolled oats, giving plenty of pure water, and some clean sand. Usually, unless the weather is warm, chicks should be kept indoors for a fortnight, placing upon the floor of the house a few sods, so that they can scratch. Scalded corn meal, formed into balls, to keep warm, as they peck it, may be given them. Do not give sour milk or buttermilk until the chicks are at least ten days old. Keep them indoors until the ground is warm each morning, and also in wet, or windy weather. All this of course, is trouble, but if no chicks die, it is worth something to the poultry keeper.

DUCKS AND GEES.

Success can be gotten with other birds than hens. Ducks and geese pay well with less care. Any person having a swamp or running stream, or any sort of water way available would find geese and ducks to pay well. These birds will forage for themselves, only needing a little feed at evening to coax them home.

Neither ducks nor geese can be successfully hatched artificially, the parent bird, or a hen being used as a hatching medium. The birds get for themselves frogs, minnows, bugs, worms and grass, and the evening meal may consist of whatever is convenient. The geese are raised for their flesh and feathers, their egg product being only enough to hatch. But the ducks are kept for feathers, flesh and egg supply as well, producing eggs from March until late in the autumn. Ducklings take three weeks and three days to hatch, while goslings break their way into the world in from thirty to thirty four days.

Any sort of house will do as winter quarters for ducks and geese, if it has a dry, well-littered floor and some way of getting sunlight. Sometimes a part of the south side is left open and a cloth covered frame arranged to close the opening in windy or stormy weather. As a rule the males and females in a flock of geese select their mates before the breeding season, and remain with those selected until late summer. For that reason allow the birds of both sexes to run together, choosing their mates naturally. The young ducks and goslings may be fed as the chickens are, but require some vegetable mash such as potatoes boiled and pounded. And in early morning keep them shut in until the sun has dried the grass. Also on wet days until their first feathers are grown. In the winter it is necessary to feed ducks and geese, because the frost has cut off their natural supplies. In the early fall, select the best of your stock to keep for breeding, fattening all the rest for the market. The birds fatten more quickly if not allowed too great a supply of drinking water, or moistened feed. They should have plenty of mash made of boiled potatoes and corn meal, and an extra ration of grain. Rouen, or Indian Runner ducks are the best varieties. In geese, the Toulouse, Gray, and the Embden pure white are the most popular. It is not perhaps generally known that sugar beets, given in a raw state to poultry, will fatten them as well as anything obtainable. Sugar beets are easily grown, and containing about 6 per cent. sugar, are very nourishing and the birds are fond of them.

Halifax Co., N. S.

MARGARET McLAREN.

FARM BULLETIN.

Apple Prospects Good in Nova Scotia.

A decidedly optimistic feeling prevails in the Annapolis Valley, Nova Scotia, in regard to the prospects for an apple crop in 1920. A representative of "The Farmer's Advocate" has just completed a survey of the Valley where one and a half million barrels of apples were produced last year and, where almost as many more will have to be handled this coming fall if the bloom and early set are good indication. As this is being written, June 14, the last of the bloom is falling in most districts and the embryo fruit is beginning to show on the earlier varieties. It is still too early to arrive at definite conclusions or make any strong predictions, but the growers are watching the trees carefully with a pleased expression in their eyes. In the majority of cases the centre flower in each cluster has left a young apple and in a great many instances there are two or three promises in each group. Most growers are satisfied with a one-spur set for the fruit is larger, more uniform, better colored, and the chances are in favor of it being cleaner than where two or three are huddled together on the same stand.

June 6 would have been "Bloom Sunday" in the Valley had it been fine weather, but the much-needed rain which fell then disappointed thousands of Nova Scotians who motor from as far as Halifax on the East and Yarmouth on the West to see one of the most beautiful sights in the world, namely, the Annapolis Valley in bloom. Many set out on June 13, but turned back sadly disappointed when they learned that the gorgeous display and beautiful perfume of apple blossom time were past for another year. There are, in the counties of Annapolis, Kings and Hants approximately 30,300 acres of orchards and a great part of this is compassed on two sides by the North and South Mountains which are only about five miles apart. Many roads through the Valley are lined on both sides by orchards and when the petals unfold early in June there is a sight and a fragrance that cannot be surpassed anywhere in the world.

The amount of bloom this spring hardly equalled that of 1919. S. B. Chute, the unchallenged "Apple King" of the Valley, predicted 75 per cent. of last year's crop, which was one and a half million barrels. Mr. Chute guarded his statement by the remark that he was judging largely by what he had observed in the Western end of the district. A. E. McMahon, Manager of the United Fruit Companies, prophesied a crop equal to that of last year, while Prof. Blair, Superintendent of the Experimental Farm at Kentville, thought there would be just an average crop, judging by the bloom.

Geo. Sanders, in charge of the Dominion Entomological Laboratory at Annapolis Royal, was enthusiastic over the outlook but thought the possible set might be reduced by the scarcity of bees to fertilize the bloom.

Many grovers, speaking for their own localities