

fluences. On holding a new-laid egg to the light, it will be seen that the air-space in the large end is very small, and the yolk almost invisible, as in Fig. 1. As the age continues, the air-space enlarges, and the yolk becomes visible, as in Fig. 2. Rough-shelled and abnormal eggs should never be shipped.

Though some markets may call for several grades of eggs, as a general rule there is no necessity for many grades. What the best trade demands is freshness, grading, uniformity in packing, and regularity in supply.

For ordinary purposes, two grades of eggs will be found sufficient to satisfy the demands made on the producer, viz., new-laid selects and No. 1. Another grade of common stock may for a time be marketed, but they must not be sold under the brand of the Association.

New-laid Selects.—To consist of strictly new-laid eggs, not over 5 days old, weighing not less than 24 ounces to the dozen; clean; of uniform size and color; packed in substantial, neat cases, having clean fillers.

No. 1.—To consist of new-laid eggs, not over five days old, weighing not less than 21 ounces to the dozen; clean, packed in substantial and neat cases, with clean fillers.

Note.—Common eggs, not covered by the foregoing grading, must not be marketed under the brand of the Association.

Growing and Fattening Chickens.

We have on hand about 250 chickens, and would like to make an experiment with them. We have built a nice clean pen which will accommodate about 40 or 50 chicks at a time. We would like to have from you advice as to the proper feeding, in order to bring these chickens to a marketable age as quickly and economically as possible. Of course, the ones we start with are the oldest of the lot, and are quite a size now. You can probably size them up when I state that they are just trying to do a little crowing. About how heavy do they want to be in order to be in the best shape for market. Would it pay us to dress them or sell live weight? They are a pretty fair lot, and are mostly Plymouth Rocks.

C. G. I.

Ans.—The best thing to do with 250 chicks of various ages is to give them a good run, with plenty of feed for the next two months, at least. The season has passed for broilers, and the roaster season does not usually open up until September, unless there should be a local demand, such as from summer visitors, etc. If you can give the chicks the run of a cornfield, root crop, or even an orchard, and put some hoppers with mixed grains where the chicks can get them at will, you will find that there is very little trouble in raising these chicks, and they will grow like weeds. Give them what water, or, better, milk they require. Then, when the oldest chicks weight from 3½ to 4 pounds, put them in crates and feed them for several weeks on a mash composed of oatmeal, barley meal, corn meal, or a mixture of the three, or, in fact, any mixture which you may have available. Mix these with sour milk or buttermilk. Give them two feeds a day, and you will find, at the end of several weeks, your chicks are fleshed up, and are in prime condition for eating. If you have no experience in killing and plucking, it may be as well to sell alive. Firms will pay a better price for crated chickens than for the other kind, and it pays the farmer better to fatten his chicks, because the last pound costs the least. Any kind of a crate will answer to fatten these chickens, though it will be found more convenient to build a number of feeding crates. These are usually built six feet long, by twenty inches high and sixteen inches deep. They hold twelve birds. Several of these crates are a good investment, and will give better results than feeding in pens or yards. In the meantime, if the cockerels are troublesome, it would be as well to take the pullets away. This, however, cannot always be done.

F. C. ELFORD.

Hens Eating Eggs—Treatment for Lice.

1. Can you tell me if there is no other way to cure hens of eating their eggs but killing them?
2. What is a sure cure for hen lice and mites? Is there any way of killing hen lice by putting it in the water or food.

E. M. C.

Ans.—1. If egg-eating is a confirmed habit, it is difficult to cause the fowls to desist. Some poultrymen have prepared nests with sloping bottoms, down which the eggs gently roll beyond reach of the hen. Some have filled egg-shells with mustard, and pasted them shut. Others have recommended clipping an eighth of an inch off the end of the bill. Perhaps the easiest and best way is to provide dark nests. The writer cured a flock of the habit last winter by this simple expedient. The hens seemed to prefer the seclusion of dark nests, anyway, and no trouble was there after experienced with egg-eating. With a flock badly addicted to the habit, and not receiving a fair supply of lime and meat food, it might not be so easily checked.

2. The following method, suggested by an expert of the United States Department of Agriculture, has proved excellent in ridding houses of mites and lice, when the weather conditions are such as to permit of the birds being kept outside the house for five or six hours. Close all the doors and windows, and see that there are no cracks or any other openings to admit air. Get an iron vessel, and set it on gravel or sand near the center of the house; place in the vessel a handful of shavings or straw saturated with kerosene, and on these sprinkle sulphur at the rate of about one pound to every ninety or one hundred square feet of floor space. Instead of using the shavings and kerosene, the sulphur can be saturated with wood alcohol. When everything else is in readiness, light the material and hastily leave the house. In case any anxiety is felt about fire, a glance through a window will show if everything is all right. There is very little danger of fire when proper precautions have been taken to have plenty of soil beneath the vessel. Allow the house to remain closed for three or four hours, at the end of which time one can safely conclude that there are no living beings inside. Now throw all the doors and windows wide open, so as to drive out the sulphur fumes thoroughly, and then the fowls may be allowed to enter. Let them in one by one, and as each one enters, catch it and dust it well with insect powder, which will destroy the lice on the birds. Tobacco dust is also good to use, instead of insect powder. The birds and house have now been freed from vermin for the present, but the eggs of the insects have not been destroyed, and in another week another swarm will be hatched out. Therefore, it will be necessary to repeat the operation once or twice before the pests are exterminated. After this care should be used to see that no strange fowl is admitted to the house or yard without having been thoroughly rid of the lice, for one lousy hen will contaminate all the rest.

GARDEN & ORCHARD.

Apple Thinning in British Columbia

It is not so much the production of a given weight of fruit that exhausts the trees as it is the strain of producing a large number of seeds. By thinning, we reduce the number of these seeds, without reducing the weight of fruit produced, since those left will grow larger, and be of better quality.

The best commercial size of apples, and consequently the best selling size of fruit, will go from about 96 to 128 apples to the measured bushel—the regulation box, properly packed. If, however, trees are allowed to ripen all they set in a season like the present, the apples will be stunted by overproduction, and will be off-color, and many

of them imperfect. Hence the importance of thinning.

The proper rule to follow in thinning apples is to do it in such a way that no two apples will touch each other when fully grown. This will leave on the tree all it should bear, and will expose each apple fully to the sunlight, and obviate many insect injuries which so frequently take place at the point of contact of two apples. In thinning, too, all imperfect and diseased specimens are removed, and these thinnings should not be thrown on the ground, but collected and destroyed by scalding or deep burying, to insure the destruction of whatever pests may be on them. If all orchardists followed this rule, the market would never be glutted, and a good (but not excessive) crop of fruit would be secured annually, weather permitting, instead of biennially.

I am practicing what I preach, and am sacrificing much of my this-year's crop. I am working in the expectation that the trees will, owing to this treatment, give me a heavy crop next year, when the many orchards that have overproduced this season will be taking a rest, with the usual result of a short crop. W. J. L. HAMILTON.

B. C.

Thinning Apples.

The following is the experience of W. H. French, Oshawa, on this somewhat new phase of orchard practice.

Three years' experience leads me to believe that thinning is fully as important and profitable as either good fertilizing, working or spraying of the orchard. Judicious pruning will help, but can never take the place of thinning.

Why do we thin? In the first place, to secure larger, more uniform and better-colored apples. In the second place, thinning encourages annual bearing. The tree does not have its vitality lowered by overcropping, from which it takes years to recover. In fact, I am satisfied that I lost ten prime Baldwin trees during the very cold winter we had a few years ago, by letting them overbear the previous season. The fertility of the orchard is not wasted in growing culls. Scientists tell us that the bulk of the tree's energy is expended in the development of the seeds and core, the pulp being nearly all moisture and a little humus. We may also add the time saved by not having to pick, sort and draw a quantity of inferior fruit in the rush of the season.

In 1907 I thinned a lot of 40 Spies, six of which were exceptionally heavily laden. Two of these I left unthinned; from two I removed two-thirds of the crop. Remaining trees were well filled, and I took off one-third of the crop. From observation, I conclude that to take off one-third is not sufficient on my light land. On heavy land it is probably sufficient; when trees are heavily loaded, one-half is better. To remove two-thirds of the crop, there is a danger of having fruit overgrown and coarse.

On the two unthinned trees, at picking time, not more than 20 per cent. would pass as No. 1; not over half of the remainder were even good No. 2 quality. Where two-thirds were removed, 95 per cent. would grade No. 1. On account of the desperate weather conditions which prevailed at picking time, these were not sorted separately; but even after they had been badly frozen, the lot sorted about 70 per cent. No. 1.

In 1908 I had a good object lesson in a block of twenty Baldwins. These were so high that I neglected thinning them. Two of these trees were very full. At picking time, the apples on these trees were fully one-third culls, and not over 20 per cent. would pass as No. 1. Other trees close beside gave over 70 per cent. No. 1, and only cost one-half the work. I am fully convinced that four hours' work on those two heavily-laden trees would have yielded me \$3.00 apiece more money. These grades of fruit are those allowed me by the Oshawa Fruit-growers' Association.

It costs about ten cents to remove a barrel of apples from a tree in summer. Figuring on the basis of the apples gathered in the fall, it should not cost more than five cents per barrel to thoroughly thin a heavily-laden orchard. To illustrate my point, a tree has, say, three barrels of apples on it. We remove one barrel in the summer. That will add five cents to the cost of producing the two remaining barrels.

If the tree were so heavily laden, we took off a little more than one-third, or if we went over it twice, so as to do the best work, the remaining fruit will increase in size to the extent that five cents will fully cover the cost.

By removing one-half the fruit in the summer, we reduce the work in the fall one-third. When we consider the increased cost of help at picking time, that alone will pay the cost of thinning. With one-third of the work done, we are not compelled to start in the fall before the fruit is thoroughly ripe, and at the same time we find the thinned fruit has matured, and is ready to be picked sooner than it otherwise would have been. I believe any system which will enable us to let the fruit remain on the trees until it has fully matured is of great importance.

This last year, also thinning worked to a great advantage on four young Northern Spy trees. I gathered 12 barrels of No. 1 fruit. 3



A Count of Heads.