

cream, and the carbolic acid then added. This mixture may be sprayed on or put on with a brush, due care being observed to see that every particle of surface in the poultry house is well covered. Coal-tar disinfectants may be used alone in place of the above mixture, but they are more expensive, and no more effective. After disinfection, clean boards may be placed beneath the roosts to catch the droppings, thus facilitating the work in future cleaning. Slaked lime placed on these boards will absorb the moisture from the droppings.

There is no way of effectually disinfecting soil. The yards, however, should be kept as clean as possible, and free from loose boards, and all unnecessary litter of any kind.

If there are occasional losses of fowls on the farm, and the cause is unknown, the birds should be examined after death for evidence of tuberculosis. If desired, specimens may be sent direct to this (O. A. C.) laboratory for examination. Such material should be securely packed and sent by prepaid express, so as to reach its destination as soon as possible after the death of the bird. The specimens will be examined, and reported upon, without further cost to the sender.

### Orchard Range for Rearing Chickens.

The importance of sufficient range, if possible, over new ground, or at least ground that is well tilled, is worthy of serious thought. Prof. W. R. Graham, Poultry Manager, at the Ontario Agricultural College, raised, in 1908, about 700 chickens in the College orchard (nearly 20 acres in extent), and this range he found none too large to grow the chickens at their best. When the land, or at least a portion of it, is cultivated, he writes, the supply of tender green food, in the way of germinating weed seeds, etc., supplies ideal green food, and at the same time gives the chicks a place to scratch. The birds have not been destructive, not even to small fruits, some of which are near by; but it must be remembered that hoppers of wheat and corn and dry mash are near each colony house, so the birds are well fed. If they were underfed, or allowed to go hungry at times, they might develop bad habits, especially during the tomato season.

"We use a 6 x 8 colony house, and brooders or hens in the house. These houses are movable, and are moved from place to place in the field, or to new fields. The birds are fed about once each week, and barrels of water are drawn about twice each week. The chicks are shut in every night, and let out the following morning. We have found board floors necessary in the colony houses, in order to keep out rats, skunks, etc. The chicks are put in the house when hatched, and remain there until ready to fatten or to go into the laying-houses. The laying pullets are hatched mostly during April and May, and put in the laying-houses about October 1st, so that they may become accustomed to their new home before the bad weather begins. Should they show any signs of laying earlier, the change is made at an earlier date."

### Lime and Vitality.

While explaining that their data on methods of incubation do not warrant any definite conclusions, Prof. Harcourt, Chemist, of the Ontario Agricultural College, states that the results of 1908 season's work serve to further establish their findings of 1907, viz., that there appears to be a marked relationship between the strength or vitality of a chick and the amount of lime which it has in its system at time of hatching. Whether lime is a cause or an effect, they do not undertake to decide definitely. The chick may be strong because it has absorbed much lime, or, on the other hand, there may have been a vital force in the egg germ which was tending to produce a strong chick in any case which, on account of its vital energy, was able to take up all the lime which it required for its normal development.

### Cement Floors in Poultry Houses.

At the Poultry Department of the Ontario Agricultural College, among other improvements, the wooden floors have been taken out of two houses, and cement floors put in. "So far," says Prof. Graham, in his 1908 annual report, "these floors have worked well, and they have also been successful in keeping out rats. For a number of years we were unable to rid the houses of these pests, and they undoubtedly destroyed much grain, as well as numerous small chickens. The cement floors were made with a fairly smooth finish."

The manager of the Poultry Department at the Ontario Agricultural College claims that they can, for the time it takes to feed, clean out the pens, etc., make at least 50 cents per hour over and above cost of feed, by fattening chickens.

## GARDEN & ORCHARD

### Apple Growers Must Wake Up.

Editor "The Farmer's Advocate":

Having recently returned from a trip to Great Britain, where I marketed, during the months of February and March, my last year's crop of apples, raised here in Elgin Co., Ont., I believe my experience may be valuable. Baldwins, Rhode Island Greenings and Ben Davis apples, grown about two miles from Lake Erie, picked early in October into boxes, and stored in a warehouse by the orchard, and sorted, wrapped in paper, and tiered in boxes, soon after picking, were shipped at once to St. John, N. B., and placed there in cold storage. When sold at Liverpool, in March, they were equal to any American apple of same variety on the market, and brought higher prices per pound of fruit than any American apple of same variety on the market. I attended fruit sales in London, Manchester, Glasgow, Liverpool, from December to end of March, and I am convinced that no better apples were offered in those markets than those raised along Lake Erie. The boxes were sold as originally packed, and wrapped in paper. They were not repacked in the cold storage, and one thousand of my boxes were sold from the middle to the end of March.

My accounts are not in such shape that I could give either the aggregate or the average price I realized. As to expenses, my family and a hired man—eight or nine of us—did most of the work of picking, packing, hauling and shipping here, while, in the Old Country, I personally supervised the sale of the crop. They were our own apples, and I kept no book account. The commissions I had to pay brokers were likely different from those usually paid by shippers not located in Liverpool.

My orchard contains 25 acres—about 800 apple trees. Last year we sprayed about five or six times with different spray materials: Liquid lime and sulphur, and Bordeaux mixture with arsenate of lead, and dust lime and Paris green. I have done ordinary cultivation, trimming and manuring. I consider that the better an apple-grower cares for his orchard—cultivates, trims, fertilizes and sprays—the larger and cleaner crop he will have.

Any statement about what a grower gets for his apples, and his expenses, has nothing to do with the plain, self-evident fact that the better or finer-looking sample of apple you can deliver to your British market, the higher the price you can realize for it. I saw single apples for sale in Paris and England for 20 cents each. Workmen in the Old Country will pay ordinary prices for common fruit in barrels. First-class apples, wrapped in paper and tiered in boxes, handled much more carefully than eggs, will bring prices entirely dependent on the condition of the apples when opened in Liverpool, or any other market there. With first-class apples, as grown here, it is entirely a matter of packing and handling in shipment, or transit to the market. Then, it is largely a question of marketing. Growers of first-class apples do not "sling" their fancy apples at the Old Country markets, and offer to take what the buyers choose to send back. They use common sense. Having a first-class article, they stand behind it, and set their price according to the market.

Growers may rest assured that Ontario apples are equal to any raised anywhere in the world. I do not mean our scabby, wormy apples, but the apples which an intelligent grower can grow here. What apple-growers need to realize is that good apples always are acceptable in the Old Country.

The writer of the article in your issue of March 25th should leave Elgin out of his list of southern counties. I am perfectly satisfied he is in error as to our county, whatever may be true of Essex or Lincoln. I agree with you in your article of February 25th: "The sooner this question is discussed, the better for the apple industry."

The impression has got abroad that Lake Erie apples are not equal to those raised farther north. I am satisfied that Elgin apples are equal to anything raised anywhere, of the same variety, and my cash returns prove it. It is admitted that we produce apples of higher color, and undoubtedly the British prefer high color. I do not think anyone will say our apples are of poorer flavor than those grown farther north. In a Liverpool fruit store I saw Oregon Baldwins and Greenings for sale at \$3.00 per box, not a bit better than Elgin apples. The Baldwin class of apples will pay well in this county.

Emphatically, I want to say that Elgin apple-growers need to wake up. They have a heritage of apples equal to any produced anywhere in this world, and are asleep over it. But let me warn them that, unless they spray their orchards and produce clean fruit, they never will reap the benefit. Besides, they must box the fruit. I watched the British markets for three months, and I am satisfied that the box is the package for high-class fruit.

J. A. WEBSTER.  
Elgin Co., Ont.

### Classify Winter Apples on Storage Quality.

Editor "The Farmer's Advocate":

There is a great difference in the keeping qualities of winter apples, as grown in the different sections of the country. In the counties bordering on Lake Erie, winter apples are quite mellow in December—more so than those in the Georgian Bay section are in April. Apples from those sections would not be safe in ordinary storage for repacking and winter shipment, and it is essential to the apple trade that the marketing of the crop should spread over a good part of the year, at least from September to April, so that those from southern sections would evidently need to be handled in cold storage. It would be a good thing for the trade if a classification of the storage quality of the winter apples from the various sections were made, so that buyer and consumer might govern themselves accordingly. Those from southern sections would be placed in cold storage or sold for immediate use, while those from other sections that were known to keep well could be stored for future sale or consumption. When a man buys a few barrels of winter apples for use during the winter months, he buys them with the expectation that they will keep. If he finds them past their season, mealy and decayed, he will be wary about buying again. On the other hand, if he finds them good and sound, and satisfactory, he will not be afraid to purchase more. So that, the sooner this question of keeping quality in our apples is settled, and thoroughly understood by the consuming public, the better for all concerned.

G. C. CASTON.  
Simcoe Co., Ont.

### Future of Early-apple Growing.

Early-apple growing for Southern Ontario has been urged by Alex. McNeill, Chief of the Fruit Division, for many seasons. Invariably, he has been met with the argument that only in certain years could money be made from early apples.

Discussing the question with a representative of "The Farmer's Advocate," some time ago, Mr. McNeill said: "I have always maintained that early apples can be made to pay every year. Reports regarding returns from shipments made to Great Britain last season, on which the Department paid charges on four cold-storage chambers, show excellent profits on Astrachans and Duchess. Prices were equal to those obtained for any, but the very choicest winter sorts exported. The average profit was ahead of the average for winter apples, and very much above that for fall varieties. The shipments turned out to be the culmination of proof that Canada can compete with English apple-growers in early apples."

"This should be of value to growers in Southern Ontario. In the past the winter apples have been a failure as to receipts in districts where early varieties do best. Either the grower or the buyer is not infrequently a loser on Southern Ontario winter apples. In a few instances, proper handling gave fair returns. Cooling and prompt shipment are needed. If the apples are taken off the trees just when colored, put into cold storage, and shipped in refrigerator cars, they keep well on into the spring months."

"What Southern Ontario men should do is to make the most possible out of winter varieties now in bearing, but not plant any more. They can make larger returns from early varieties. We have tested the keeping quality, and find that the winter varieties from that part of Ontario, with ordinary handling, do not keep much past the New Year. A buyer is liable to lose if he cannot get a car to ship promptly. Frequently apples are in barrels, with no car available for ten days. I have advised growers to dump the apples, in order to avoid losing the barrel also. Several buyers have had sad experiences."

"There is a rapidly-growing market for the early sorts. Practically unlimited supplies are wanted in the Canadian Northwest and in Great Britain. With a greater supply, we will find better shipping facilities, and the only difficulty will be overcome. There is no danger of overdoing the supply in a quarter of a century. Canadians do not seem to realize that we can put early apples on the British market almost as early as United States growers. The apple-growing sections of the United States are not far south of Southern Ontario. Our growers always can hold the home market, and, in addition, gain a big share of the Old Country market. Shipments to Great Britain can be placed in the hands of the consumer in two weeks' time. To the Canadian West, the time taken to land car lots varies from five to ten days. The trade would be much better if consignments reached their destination in regular order. As it is, there is too much bunching of cars, forming a disastrous glut on the market."

The points brought out by Mr. McNeill are deserving of consideration by every grower. Co-operative effort and intelligent marketing of early apples no doubt would make profit, instead of