

Several broods when weaned have adopted other cluckers—broken-up sitters without families. Last year one brood had simultaneously three mothers caring for them in perfect harmony day and night. I dubbed them "ma-ma," "grand-ma," and "auntie." Some guinea fowls, by following up, surrounding and persistently heading off, compelled in succession three adopted cluckers to scratch for and accompany them. A rooster of mine once took pity on a d joined the overworked mother of seventeen chicks. Finally I ventured to let him sit in the coop with her at night, as he desired, and soon found he was hovering sixteen chicks, while the old lady had one only. Shortly after this ungrateful mother, feeling her flock were in good care, deserted entirely both him and them. But this wonderful step-relative proved equal to the emergency, and brought up the chickens.

Hens are generally ravenous when the long period of incubation is over, and fully satisfying them with grain and water at the outset saves the chicks' choicer food afterwards, and prevents restlessness. For two weeks, or less, I allow chicks no water to drink; first, because with so much soft food they do not need other liquid; second, when so little, they cannot drink without getting their feet in, tumbling around, and generally wetting themselves; third, the small red worm which causes gapes originates in water, where it may often be seen, and of which chicks need to get the start. Here, by contrast, may be the very place to emphasize how much older chickens, and especially laying hens, need water. An egg is eighty-four per cent. water, and cannot be produced unless the hens have liquid as well as solid food. They like a new, fresh supply of water three times a day.

"Natural Incubation."

[A Paper read by S. B. Blackball before the Winnipeg Poultry Association.]

In obedience to the commands given at our last meeting, I am to endeavor to place before you some ideas in reference to the conditions necessary to the successful raising of chickens by natural incubation. In these days when everything has to go by steam or electricity, and inventors are straining every nerve to find some even more expeditious way to annihilate space, it seems almost as if we were going back to the dark ages when we attempt to talk of raising chicks by the old fashioned hen. Still, in spite of the fact that artificial incubation has so far been made a success that from 100 to 700 egg machines are to-day in successful operation, we who are limited to small city yards, and in consequence are debarred from the use of these machines must of necessity keep the old track, or go out of the business altogether. The last solution of the difficulty is one that you will all agree with me is not to be thought of, hence a little advice will not be out of place. First, as early broods are what we all want, and in this country the frost is not out of the ground when we want to commence setting our hens, our preparations really have to commence six months before, in the placing of a sufficient quantity of earth where we can easily get it when wanted. In making the nest, I believe it better to have it on the large size at the bottom; put say six inches of good mould (sod would be better), see that it is not frozen, at the same time have it quite moist, being careful to have the top of it perfectly even. Then with good, soft hay make your nest on the top of the earth, using about two inches of hay; this will permit of sufficient moisture reaching the eggs, as the warmth generated by the hen draws it up from the earth beneath the hay. In the early part of the season it is well to remember that it is better to "go slow but sure," and we would not recommend the placing of more than nine eggs under the hen, as with this number the body of the hen actually comes in contact with each egg. It is also well to sit two hens at the same time, as the eggs by the sixth day can be tested, and it may possibly happen that one hen can cover all the fertile eggs, and the other hen can be started anew. A great mistake made, especially by beginners, is to suppose that the hen must sit

all the time, and to this end they feed her in the nest, and even fasten them down to prevent them coming off. I have known this to be done. The hen should be allowed to leave her nest every day; more than that, if she does not do so voluntarily she should be taken off; in doing this care should be taken not to frighten her; if the same person attends her all the time she will after a day or two allow the attendant to handle her. In lifting her take hold of the wings and gently raise them, first lifting the bird by them. Feed only good, sound wheat or barley (wheat preferred), no soft food; see that fresh water is at hand, and, I was going to say, above all, see that a good dust bath of sifted coal ashes is always ready. This is necessary, not only for the comfort of your hen, but also for the life of your prospective chicks. Another point that I would draw your attention to is the location of the nest. If at all possible, have it entirely away from the other birds; remember that the quieter it is the better. With the above carefully followed out there is not much fear but what you will be able to report a good percentage as the result of Biddy's three weeks retirement at her country seat. I have purposely left out the question as to the advisability of taking the chicks as they come out from the eggs until all are hatched, though I believe that it is better to leave them alone. Some advise sprinkling the eggs and nest with warm water the last day or two, but my opinion is that with the earth at the bottom of the nest all the moisture that is necessary will be supplied.

The Farm.

Notes from P. E. Island.

BY WILLIAM CLARK, NORTH WILTSHIRE, P. E. I.

An experimental dairy station for this province is now an established fact. Prof. J. W. Robertson, Dominion Dairy Commissioner, visited our island during the early part of last month and made final arrangements for the establishing of the station. New Perth, Kings Co., is to be the favored location. At New Perth the Professor found a vigorous dairymen's association willing to guarantee him the milk of 340 cows for the station, and to provide all buildings necessary. On his part, the Commissioner promised to furnish all the necessary appliances for manufacturing cheese by the best methods, to put an expert in charge of the station, and to market the product in England as P. E. Island cheese. The patrons who furnish the milk will get all the proceeds save the charge for manufacturing. It is intended to carry on the work of dairy instruction in other parts of the province as well. The expert in charge of the New Perth station will be at liberty at times during the summer to address meetings of farmers and give all the instruction in his power as to the best methods of dairying to all who are willing to learn. In the autumn further plant will be provided the station for manufacturing butter instead of cheese during the winter.

Dairying during the last eight or ten years has not received the attention from our farmers that its merits demand. Horse breeding has been so remunerative that the majority of our farmers have turned all their attention to raising horses. But now there is a decided change, and farmers have to face the fact that they cannot get two-thirds the price they could several years ago for good horses, while they can hardly get clear of plugs and smaller horses at any price. Therefore, at this stage the operations of the dairy station will be watched with the keenest interest.

In a meeting held recently, Prof. Robertson touched on matters of general farming, but dealt chiefly with his favorite theme, "The cow and the dairy." He impressed us with the fact that if we intend to make the most of our business, we must raise more cheap feed, such as corn ensilage, clover, etc., which, when fed on the farm, left us a fine lot of rich manure. He also told us that in selling dairy products we sold a very small amount of plant food off the farm.

Trade and Transportation.

Although our agricultural export trade, taking all lines into consideration, is now on a better basis than at any previous time, there are still serious drawbacks that cannot but militate against a better and faster development of trade in some articles.

The trade in cheese and cattle has made wonderful progress, until these are now on a most satisfactory footing as far as demand is concerned. The last few years has opened the way for a further extension in products from the farm, which, heretofore, have not successfully competed with the same lines from other countries.

It is to the latter word in the heading of this article we wish to call special attention, and to the reason why Canada is so unfortunately situated as regards her carrying trade. Geographically no country is better situated than ours to supply with agricultural products Great Britain, the present market of the world; our producing powers are practically unlimited, and require only time and demand to develop them. Then what is it that at the present time is keeping us from possessing that which we are so badly in need of, viz., this market? The answer is, the defective transportation. Not only are the relative freight rates higher, distance considered, than those from any other country in competition, but the handling of the goods, the allotted space and accommodation on board both cars and steamships, is often so defective that goods are entirely ruined in transit. And, again, so much time is consumed during their transportation that prices at the time of shipping are no criterion of what prices may be when the goods arrive; consequently many dealers are deterred from embarking in the trade, or refuse to continue that with which so much uncertainty is connected.

How different from ours are other countries. Take Tasmania, for instance, that has an ocean voyage of at least ten thousand miles, with all the difficulties of tropical heat to contend with, yet is enabled through the efficiency of her steamship service to land every description of perishable products in England in perfect condition. This not only applies to meat, but also to dairy products and fruits of all kinds. Apples, pears and plums are landed as fresh as if just plucked from the trees, while car loads of Canadian fruit are repeatedly subjected to such high temperature on board the vessels employed in the Canadian trade, that they are absolutely ruined.

The government of Australia, New Zealand and Tasmania are all making strenuous efforts to gain the British trade, and have been so successful thus far that they have already supplanted trade which heretofore had little opposition.

And now let us enquire what has been done for us in Canada. Our government has given substantial aid to our grandly equipped railway systems; but are those who have paid for these luxuries deriving a corresponding benefit? The answer is certainly not in the affirmative. Our railways charge such exorbitant rates for local freight, which, together with the equally bad arrangements at the sea-board, and still worse accommodations on board the vessels employed in Canadian trade, combine to make shipping disastrous in the extreme.

Substantial government aid has been given both by Dominion and Provincial Departments in order to educate the farmers of this country as to what they should produce. But of what avail is the production if the proper outlet is wanting?

In some lines of production, such as grain, etc., and articles not perishable, only reasonable promptitude in delivery is required in order to give the shipper a fair profit; cheese also arrives successfully in the British markets; but in the matter of our more newly-found demand for Canadian eggs and butter the case is far different. These must have suitable departments both in cars and on shipboard; success or failure depends upon the promptness of delivery. There is now no question as to the reception that these goods receive, providing they arrive in the proper condition.

Already Canadian eggs have obtained a name at a number of points in both England and

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