

always been haunted by a terrible fear that he would do something desperate, and perhaps come to a fearful end; and to see him as he is now is more comfort than I can express. All the children are improved, and Miss Fisher is quite in spirits about them, and has lost her air of depression; whilst as for Jessie, I hardly know her in her diligence, and her readiness to sacrifice amusement to the desire of getting more knowledge, and fitting herself to be something more than a mere butterfly young lady—like her mother at her age. That unlucky ball, though it cost us a pretty penny in buying back the stolen diamond, did a great deal of good to the girl. It has quite cured her of wishing to be a woman before her time. And though this must be quite a secret between you and me for the present, I should like you to know that Lady Easterby has whispered to me that her son seems more than ever smitten with Jessie's pretti-

ness, since she has grown more shy and retiring, and has ceased to try and attract his notice. I am so sorry we ever put silly ideas into her pretty head about marriage, when she ought to have been thinking of her books and her music, and such things. But she turned to them of her own accord when she was frightened at the lengths her folly and vanity had carried her; and now I do trust I have learnt sense enough not to disturb her again, but to encourage her to keep her youth and unconsciousness as long as possible. Why, my dearest Esther, you are younger in looks and mind, and are far fresher now, than I was at twenty. I mean to take a leaf out of your book both for myself and for the children."

"Yes, that we do," said Mr. Overton's voice at the door. "Well, Esther—if I may take a brother's privilege and call you so—I have no doubt you have been enough harried with thanks as it is, so I

will keep mine for another occasion, only don't go away with the impression that I am ungrateful, because I am not, and that I hope to prove to you as occasion may serve, now that we are to be such near neighbours. Ah, you want to escape, I can see; and there is a great outcry for you downstairs, so I will not detain you longer. I wish you all joy of your future, and hope you will never regret the year you spent in the bear-garden here."

"Indeed, indeed I never can," said Esther, warmly. "And you must not think that I was unhappy here. I had my cares and anxieties of course, but those I should have had anywhere. And I do not think I ever spent a more interesting or, on the whole, a more happy year anywhere than this last one has been when my home has been at Greyfriars."

[THE END.]



ARTIFICIAL HATCHING.

ARTIFICIAL hatching can hardly be called a modern discovery, as it was practised in Egypt thousands of years ago. I do not know exactly how it was done there, but I will try to describe how I have seen it done here.

Most likely some who read this have seen the contrivances used in Regent Street, or those in the Health Exhibition, but I may say, for the information of people to whom the subject is new, that the first thing required is an oven: not that any chickens need be expected if eggs were put into the oven in the kitchen range and left there for three weeks. Pure air is so necessary to success in hatching that the egg oven requires a room to itself, in which the temperature should be kept at 60° Fahrenheit.

The structure called an egg oven looks like a large box, having plugs or slides in it for ventilation, a small round hole in the top to pour water into, and a tap near the bottom to let the water out: for the box-like object contains a tank holding several gallons of water, and within this is an aperture for the eggs, often called the nest.

When the eggs are put in—which is best done in March—the tank must be quite empty before it is filled with boiling water through a funnel. It will have to be always kept full; and no eggs should be put in the nest until a day or two after the tank is filled, that the heat may be steady. Some sand is put into the nest to place the eggs upon. They should not be shaken; and if they are brought from the hen-house while the sun is shining they ought to be covered. After being put into the nest the eggs should be turned every day, and also held up between the operator and the light, to see if the little dark speck, or germ, is increasing in size, or whether any eggs are clear. The latter will not hatch, and should be taken out and replaced by others. The eggs in the nest must be damped occasionally: a sitting hen would not keep them dry always. The temperature must also be tested whenever

the oven is opened by putting a registering thermometer upon the eggs in the nest—the arrow looked at to learn how high it has been, and drawn down by the magnet to the present level of the mercury.

When not in use, a small bar of iron should be kept upon the magnet. The temperature of the nest was generally 98° Fahrenheit. It may be as low as 75° Fahrenheit just before hot water is put in the tank, and as high as 103° or even 104° Fahrenheit just after.

One must do anything—or as poor people, and those who have earned their incomes, more often say, *give*—anything rather than let the heat be greater than this. The chickens would all die if the nest were allowed to be hotter.

About three gallons of water have to be taken out of the tank at half-past eight o'clock twice daily, and the same quantity of boiling water put in, to keep the tank full. The exact quantity of water taken out depends on the size of the oven and on the heat of the weather. More is required in cold than in warm weather. The nest, too, is always warmer when the eggs are nearly hatched.

Some people think that a sitting hen having to leave her nest to feed is at best a necessary evil so far as the eggs are concerned, instead of which it has been found a distinct assistance in hatching the eggs. In artificial hatching it has proved indispensable to imitate the effect of this by opening the ventilators and both doors of the oven twice a day. Only experience will teach how long they should remain open. If the nest is ever found too hot, a woollen shade, sold for the purpose, must be put over the eggs.

When all these operations have been performed with the utmost regularity for three weeks, chickens will appear, unless all the eggs first put in the nest were clear.

Hens have often been blamed for throwing eggs out of the nest: it was generally supposed they had done so accidentally; now it is believed they have some means of knowing

which eggs will hatch, and discard the others. This must also be done in an egg oven. Should any eggs be added, or chickens die, they should be immediately removed.

Chickens generally announce their existence by chirping cheerfully a day or two before they come out of the shell. They often leave one half of the shell neatly inside the other, which was formerly supposed to have been done by the hen.

The chickens may be left in the oven for some hours. They will not need any food for twenty-four hours after they are hatched: that is provided in the egg, just as bees carry their food with them when they swarm. When the chickens are taken out of the oven they should be put into another box, called a "brooder," kept warm by a small tank of hot water over them. They will need feeding with fine oatmeal or bread-crumbs at regular intervals of an hour and a half, and to be supplied with clean water to drink.

When they get old enough to be out of doors, they will be so tame they will run to whoever feeds them, and like to be handled. They usually follow the largest chicken of the party. Being without a mother to defend them, they must be kept in a place secure from rats and hawks.

The only notice hens take of artificially hatched chickens is to drive them away, hunting and pecking them if they go into their inclosure. The hens will also steal their food if they can. Among the advantages of artificial hatching are the tameness and cleanness of the poultry.

They will not be infested with insects if the hen-house is kept clean and strewn with fresh ashes every day; and if instead of the eggs being laid in nests, they are laid on a little bracken placed on a bit of waterproof in a dark corner of the henhouse. Many more chickens can be reared in this way in a season than could be hatched under hens, for none can be killed by hens treading upon them.

A. LOCKHART.