

thick shells that you cannot see into. Perfectly clear eggs may do for cooking purposes; they look like fresh eggs. Keep aside all others to be cooked hard for the chicks, as all fertile eggs, are in the drawers keep them altogether just as in a nest, being close together they will have a more uniform heat. In our next article we will see how to feed and care for chickens in brooders.

S. GAGNE.

THE CARE AND FEEDING OF CHICKENS IN BROODERS.

(Continued.)

It is pretty difficult to fix an exact guide for the care to be given to the chickens during their first age.

In each locality, poultry breeders have adopted different modes according to the resources they have at hand and everywhere the results are good. The best guide is experience, although there is an indispensable quality to pass master in the art of raising fowls, just like other animals, we must be regular and have observation.

At two days a chick has habits that we must understand and know how to manage. Do not wait until the bird is sick to give him care; it would be too late and this, too, you will learn by practice.

It is the first days' care that demands the most attention; a chick must not eat before 24 or 30 hours after being hatched; we must give him time to digest the yolk of the egg that he has nearly all in the abdomen. If he eats before this operation is finished, the food will stay in his organs still badly hardened, and cause him an inflammation often mortal. Many times, chicks die between the age of five and ten days old, in consequence of this first indigestion.

Now, before giving their first food, let us see if they are properly settled in the brooders. First, they must have warmth enough, not less than 80 degrees Fahr., for the first ten days, after that age between 70 and 80 degrees will accommodate them well until they are five or six weeks old when they generally commence to roost and can dispense with the brooder.

Secondly, they want to be in a dry place, dry floor, whether wood or earth: in the brooder, we must have the best and cleanest material that we can give for that purpose, and first it is dry fresh sand from the river, it is the best absorbent of moisture, bad smell; and lasts clean longer than any other thing we have tried. Spread about $\frac{1}{2}$ an inch thick of this sand on the floor and try to have always at hand a good supply of it ready for immediate use. Next comes chaff or cut straw. Allow 50 chicks for each brooder, or every other compartment, to be kept together, for, in our experience, we have found this number the best for the first three weeks when at that age they must be reduced to colonies of 25 and remain in other brooders or warm places; they are growing and they want more room. You can keep 50 in a lot provided they have not less than 4 x 8 feet of floor until they reach five weeks old; of course it demands also more space inside the brooder and a better supply of pure air and ventilation. For the first two or three days give them only a small space round the brooder that they may understand quicker their warm nest, which they will know soon and learn promptly how to conduct their own care.

Now for the first food; we have not found anything better than the infertile or clear eggs, that we have taken from the incubator after being tested, they must always be saved for that purpose, cooked hard and crushed in the hand, or cut in slices given on clean little boards, or better small wood troughs 3 x 15 and only one inch high. You will find these last very handy and economic for feeding crushed grains, etc., etc. We find these eggs the best and most natural food they can have; indeed it is their first food they have provided for (the yolk of the egg) before hatching, it gives them strength and energy before and when the time to break their hard prison arrives. This same food makes them live 30 or 40 hours after hatching without any other help, and they keep as lively as crickets.

Next to cooked eggs for their first days is coarse dry oatmeal given always in clean places, or in the troughs described before. They must always have that food before them, this grain is cheap when we consider it goes so far for young chicks, given with a few baked egg as stated; one pound of that oatmeal and a few infertile eggs will feed a fifty lot of chicks for all their first week. Never feed on eggs alone, it generally gives them diarrhoea; when once started is often difficult to remedy; prevention is better than cure. After their first week they are able to eat good whole wheat, also cooked lean meat, cut fine, given three times a week, and as like other beings they like variety, give them small cooked potatoes mashed and salted as for our own use. A little salt in soft food will be very much appreciated by our little pets, at the third week, and later on give them yellow corn meal scalded and well mixed with as much wheat bran. We have found a very simple and effective manner to prepare that food. I will tell you if possible for your benefit how to do it. Put half a bucket full of the meal into a tub or other clean vessel you may have at hand, pour in about as much boiling water and a little salt, stir and mix well until you have it like the consistency of soft butter, it will swell much and nearly double its volume in a few minutes, let it cool, and it will by cooling come thicker yet, the thicker you have it done, the longer it keeps fresh. Now whenever you want it, it is always ready, take what you want and mix well with the same quantity of dry wheat bran, give them only what they can eat, when there is any left take it out, that they may not spoil it, learn their appetite and you will know soon what quantity is needed to satisfy them. Milk of any kind mixed in their food if you have it is very good; corn, wheat, barley and oats well mixed and ground coarse is a very good food given dry or a little moist with milk or water. This meal may be mixed, too, with cooked potatoes, beets, turnips, cabbage, carrots, and any kind of cooked vegetables to make variety. When you prepare any kind of soft meal try to have it as dry as possible for any kind of sloppy food generally gives them diarrhoea. Bread soaked in milk and squeezed in the hands to let out the greatest part of the milk is good in moderate quantities. When once out in the air, chickens are not so particular about the food yet for that reason don't try to feed them with damaged grain or mouldy and sour food of any kind. The best at the end is the cheapest.

Now chickens must have always before them clean and pure water with small vessels fixed in such a manner that they may pass only their head, this will keep the water cleaner.

S. GAGNE.

(To be continued).

The Orchard and Garden.

WAXES FOR GRAFTING AND FOR WOUNDS.

1.—COMMON RESIN AND BEESWAX WAXES.—Reliable wax.—Resin, 4 parts by weight; beeswax, 2 parts; tallow, 1 part. Melt together and put into a pail of cold water. Then grease the hands and pull the wax until it is nearly white. One of the best waxes, either for indoor or outdoor use.

2.—Resin, 4 pounds; beeswax, 1 pound; tallow, 1 pound.

3.—Resin, 6 pounds; beeswax, 2 pounds; linseed oil, 1 pint.

4.—6 pounds resin, 1 pound beeswax, and 1 pint linseed oil; apply hot with a brush, one-eighth of an inch thick over all the joints.

5.—FOR WARM WEATHER.—1 pounds of resin, 1 pound of beeswax, and from half to a pint of raw linseed oil; melt altogether gradually, and turn into water and pull. The linseed oil should be entirely free from cotton-seed oil.

6.—Resin, 6 parts; beeswax, 1 part; tallow, 1 part. To be used warm in the house.

7.—Resin, 4 or 5 parts; beeswax, $1\frac{1}{2}$ to 2 parts; linseed oil, 1 to $1\frac{1}{2}$ parts. For outdoor work.

8.—LEFORT'S LIQUID GRAFTING WAX or ALCOHOLIC PLASTIC.—Best white resin, 1 pound; beef tallow, 1 ounce; remove from the fire and add 8 ounces of alcohol. Keep in closed bottles or cans.

9.—ALCOHOLIC PLASTIC WITH BEESWAX.—Melt 6 parts white resin with one part beeswax; remove from stove and partially cool by stirring, then add gradually—with continued stirring—enough alcohol to make the mixture, when cool, of the consistency of porridge. In the temperature of the grafting-room it will remain sufficiently plastic to permit applying to the cut surfaces with the finger.

10.—ALCOHOLIC PLASTIC WITH TURPENTINE.—Best white resin, 1 pound; beef tallow, 1 ounce; turpentine 1 tea spoonful; add enough alcohol (15 to 15 fluid ounces or 25 per cent alcohol) to make the wax of the consistency of honey. Or, less alcohol may be added if the wax is to be used with the fingers.

(To be continued).

(Extracts from the "Horticulturist's Rule Book" by J. H. Bailey.)

APPLES.—Keep the fruit as cool as possible without freezing. Select only normal fruit, and place it upon trays in a moist but well-ventilated cellar. If it is desired to keep the fruit particularly nice, allow no fruits to touch each other upon the trays, and the individual fruits may be wrapped in tissue paper. For market purposes, pack tightly in barrels after the apples have shrunk and store the barrels in a very cool place.

Some solid apples, like Spitzenburgh and Newtown Pippin, are not injured

by hard freezing, if they are allowed to remain frozen until wanted and are then thawed out very gradually.

Many apples, particularly russets and other firm varieties, keep well when buried after the manner of pitting potatoes. Sometimes, however, they taste of the earth. This may be prevented by setting a ridge-pole over the pile of apples in forked sticks, and making a roof of boards in such a manner that there will be an air-space over the fruit. Then cover the boards with straw and earth. Apples seldom keep well after removal from a pit in spring.

Apples may be kept by burying in chaff. Spread chaff—buckwheat-chaff is good on the barn-floor, pile on the apples and cover them with chaff and fine broken or chopped straw 2 feet thick, exercising care to fill the interstices.

CELERY.—For market purposes, celery is stored in temporary board pits, in sheds, in cellars, and in various kinds of earth pits and trenches. The points to be considered are, to provide the plants with moisture, to prevent wilting, to prevent hard freezing, and to give some ventilation. The plants are set loosely in the soil. There are several methods of keeping celery in an ordinary cellar for home use. The following methods are good:

Select a shoe or similar box. Bore one-inch holes in the sides, four inches from bottom. Put a layer of sand or soil in the box, and stand the plants, trimmed carefully, upon it, closely together, working more sand or soil about the root part, and continuing until the box is full. The soil should be watered, as often as needed, but always through the holes in the side of the box. Keep the foliage dry.

Celery may also be stored and well blanched at the same time, in a similar way, by standing it in a barrel upon a layer of soil. Some roots and soil may be left adhering to the plants. Crowd closely, water through holes near the bottom as in case of box storage, and keep the plants in the dark. Blanched celery can also be preserved for a long time by trimming closely and packing upright in moss inside of a box. A large quantity of the vegetable may thus be stored in a small space.

ONIONS demand a dry cellar, and the bulbs should be thoroughly dried in the sun before they are stored. All tops should be cut away when the onions are harvested. If a cellar cannot be had, the bulbs may be allowed to freeze, but great care must be exercised or the whole crop will be lost. The onions must not be subjected to extremes of temperature, and they should not thaw out during the winter. They can be stored on the north side of a loft, being covered with two or three feet of straw, hay, or chaff to preserve an equitable temperature. They must not be handled while frozen, and they must thaw out very gradually in the spring. This method of keeping onions is reliable only when the weather is cold and tolerably uniform, and it is little used.

ROOTS of all sorts, as beets, carrots, salsify, parsnips, can be kept from wilting by packing them in damp sphagnum moss, like that used by nurserymen. They may also be packed in sand. It is an erroneous notion that parsnips and salsify are not good until after they are frozen.