

A Weekly Page of Poultry Hints to You

Here is a Department Full of Bright Ideas For Readers of the Home and Farm Magazine Section.

The following is the third of a series of articles by Harry M. Lamson, Senior Animal Husbandman in Poultry Investigations, Bureau of Animal Industry of the United States Department of Agriculture, on the natural and artificial incubation of hens' eggs.

THERE are a large number of reliable makes of incubators manufactured in this country, so that we can not recommend any particular machine. Some machines have become popular in certain sections of the country, because they were advertised extensively in that section rather than on account of special adaptability to the climatic conditions. Cheap machines are less reliable, require more attention, and wear out much quicker than higher-priced incubators. As the value of the machines is small compared with the value of the eggs used during the normal life of an incubator, it is poor economy to purchase a machine which is not reliable. Whenever possible it is well to select an incubator which is giving good satisfaction in your vicinity, so that you may get the benefit of the experience of other operators in your section.

The details of construction and equipment of most incubators are so subject to change that it is impossible to state definitely the best kind of lamps, brackets, regulators and other equipment for the different incubators. The lamp should have a bowl large enough to hold sufficient oil to burn at least 36 hours under average weather conditions; it should be easy to remove and replace, and set absolutely tight in position. The incubator should be set so that the lamp is at a convenient height and the egg tray convenient to handle.

Number of Incubators.

The best size of an incubator to buy depends upon circumstances. It takes about as much time to care for a 60 as it does for a 360 egg machine, so that it is generally advisable to get one of at least 150-egg capacity, although special conditions often exist which make smaller machines valuable. A small machine is often used in connection with a larger one, placing all the eggs in the large machine after the first or second test. Incubators of from 300 to 400 egg capacity are generally used on those large farms which use individual lamp incubators. Many poultry men believe that it pays to have an incubator capacity large enough to hatch the bulk of their stock in two or three batches, so that much time is saved in tending to the incubators and brooders, while the chickens are more even in size than those that are hatched when the incubating period extends over a longer time. A fair estimate for a poultry farm is an incubator space of one-egg capacity per hen, provided that about one-half of the flock is to be renewed yearly and no outside hatching is carried on. The larger machines cost less in proportion to their capacity than the smaller ones.

Incubator Cellar or House.

Incubators are operated in a great variety of places with success. Where only a few small machines are used they are generally run in a room or the cellar of the house. A special cellar or incubator house should be provided where the incubator equipment is extensive or where mammoth machines are used. The main essentials are to have a room which is not subject to great variations in temperature and which is well ventilated so that the air is fresh and sweet. If built above ground the walls should be double and the entire building well insulated. Good results in hatching are secured in incubator cellars and in incubator rooms which are entirely above the ground level, but the former place is more commonly used. Incubators may be operated in buildings with single walls, especially in sections which have a mild climate, but a well-insulated room is preferable.

The incubator room or cellar should be large enough to allow the attendant to work around the machines conven-

iently. Many incubator cellars are provided with some system of ventilation in addition to the windows, while in others the ventilation is controlled entirely by the latter method. The essential features are to keep the air in the room fresh and sweet. Muslin screens on the windows provide good ventilation without draft and at the same time keep the sun from shining on the machines. Many incubator cellars have cement floors, which are easier to keep clean and neater than dirt floors.

Setting Up and Operating Incubator.

Set up the incubator according to the manufacturer's directions, and see that the machine is perfectly level. If a spirit level is not available, a long shallow pan of water set on top of the incubator can be used as a level to assist in setting up the machine. Be sure that all parts of the incubator are in their proper positions and that the regulator works freely. Do not plane off the door of the incubator, if it sticks, until the machine has been heated up and thoroughly dried. Run the machine at about 102 degrees F. for a day before putting in the eggs. It takes several hours for the machine to come back to its correct temperature after the eggs are first put in; therefore the regulator should not be touched during that time. See to the regulation of the temperature of the incubator before opening the door of the machine to attend to the eggs. Look to the care of the incubator carefully and regularly, but do not change the regulator any more than is absolutely necessary. The eggs tend to throw off more heat as the embryo develops, so that it may be necessary occasionally to change the regulator slightly. The temperature of the egg chamber may be regulated by lowering the flame of the lamp in the middle of the day where the room is subject to a considerable rise in temperature. The machine should receive care enough so that the temperature remains nearly even. Most operators tend to their incubators two or three times daily, and occasionally make extra trips as conditions require them. Incubators require careful and regular attention, which, though simple is very exacting. If attended to regularly incubators do not take much time, while neglect will generally show its effects on the hatch.

The Correct Temperature.

The correct temperature depends upon the position of the thermometer in the egg chamber. The manufacturer's directions should be followed and changed only after considerable experience indicates that they can be improved. The need of this change may be due to the fact that a manufacturer can not make a machine and rules which will be adapted to all conditions. When the bulb of the thermometer rests directly on the eggs the temperature is usually held at 101½ degrees to 102 degrees F. the first week, 102 degrees to 103 degrees F. the second week, and 103 degrees F. the third week; while a hanging thermometer is operated at about 102 degrees to 102½ degrees F. the first two weeks and 103 degrees F. the last week. At hatching time the machine will frequently run up to 104 to 105 degrees F. without any injury to the chickens. If the temperature has been right up to hatching time, it is usually better not to change the regulator at that time, provided the temperature does not run up above 105 degrees F. While the eggs will hatch just as well if the temperature is run slightly higher than noted above throughout the hatch, the chickens are apt to be weak and hard to raise. In a good hatch the eggs will start to pip on the evening of the nineteenth day, and most of the chickens will be out of the shell on the morning of the twenty-first day. If the hatch is much earlier or later than this it indicates that the conditions during incubation have not been right. A high temperature may hatch too quickly and produce weak chickens, while a continuous low temperature throughout the hatch will delay it for several hours.

Care of the Lamp.

Use good oil. Clean and fill the lamp once daily, trimming the wick by scraping the charred portion off with a knife or square-edged nail, or by cutting the wick with scissors. The burners should be kept free from dirt and thoroughly cleaned by boiling after each hatch.

A new wick is a good investment for each hatch, thus eliminating any danger of the wick giving out. Turn the eggs before earing for the lamp, so that there will be no chance to get oil on the eggs. The flame is apt to increase in size after lighting, so that it is advisable to return about one-half an hour after tending to the lamp to see that the flame is right.

Care of Machine at Hatching Time.

After the eggs begin to hatch, leave the machine alone until the hatch is well over. Do not open the door to see how the eggs are hatching, as it allows the moisture to escape, which is very essential at this time. Keep the incubator dark at hatching time by covering the glass in the door with a cloth or burlap sack, so that the chicks will not be attracted to the front of the machine by the light and become restless. When the chicks are all hatched, remove the egg tray and open the ventilators, according to the manufacturer's directions, and keep them in the incubator from 24 to 36 hours after the hatch is over before removing them to the brooders. If they are to be shipped a long distance away, so that they will be on the road two or three days, it is better to ship them as soon as the hatch is over and the chicks are thoroughly dry. Chicks which pip, but are unable to get out of the shell by their own efforts, rarely amount to much if helped out, although, if desired, when most of the eggs are hatched and the chicks dried off, so that they will not be injured by opening the incubator door, any which have pipped may be helped out by cracking the shell and placing them back on the egg tray.

Turning and Cooling the Eggs.

Eggs should be turned and cooled according to the directions furnished with the incubator. The eggs are usually turned for the first time at the end of the second day of incubation and twice daily through the eighteenth or nineteenth day, or until the chicks commence to pip. After turning the eggs, reverse the egg trays end for end, and from one side of the machine to the other in two-tray incubators. Keep the incubator door closed while turning the eggs, unless the directions state that it should be left open. Various mechanical devices have been invented for turning the eggs in the incubator, but most poultrymen prefer to shuffle them with their hands, removing a few from the center of the tray and working the others toward that point, placing those which were taken out on the sides of the tray. (Cracked eggs may be saved by putting courtplaster over the crack, but this is advisable only in instances where the eggs are very valuable). The length of time to cool eggs depends upon the temperature of the incubator room. A good general rule is to leave the eggs out of the incubator until they feel slightly cool to the hand, face or eyelid. Cool once daily after the seventh and up to the nineteenth day. Place the trays of eggs on the top of the machine or on a table in such a position that they are not in a draft, and so that the tray does not project over the edge of its support, thereby allowing part of the eggs to cool much quicker than the rest.

SHELTER SHOULD BE WELL.

THE HOUSE in which the chicks are sheltered during the summer months has a very marked effect upon the rate and continuity of growth. The house for the summer flock is used primarily as a place in which to roost at night, protected not only from the rains and damp cold nights which often come at some time during the summer, but also from the various enemies, such as rats, weasels, dogs, etc. One of the reasons that young birds grow so rapidly when allowed free range is that they are continuously supplied with an abundance of fresh air, a very essential and important requirement of growing life of all kinds. It is of prime importance to construct houses for summer flocks with a view toward getting a maximum amount of fresh air. This can be obtained only by building a house planned so that there will be abundant ventilation and circulation of fresh air during the night.

Another quality, other than abundant ventilation, which a summer colony-

house should have is roominess. Of course, it is hardly necessary to allow as much room in a house of this kind as we would in a winter laying-house in which the birds would be confined the greater part of the time, but enough perch room to allow each bird room enough to roost without being crowded is essential. Where chickens are being raised in rather large numbers, the colony system of rearing has proved to be very efficient. By this system we mean allowing one house to from fifty to seventy-five birds, and keeping them in smaller flocks rather than allowing several hundred to run together and roost together in one large summer-house. The colony-house is made portable so that it may be moved from place to place as it may be desirable to do in order to make use of the most economical range or keep on hand a constant supply of green feed.

CARING FOR THE YOUNG.

THE object of caring for the young, growing birds during the summer months is to induce a uniform and continuous growth and development from hatching time to maturity. The early care necessitates proper breeding, which means a correct temperature and careful feeding. If chilling is prevented and they are kept from crowding in the brooder a greater percentage of the birds hatched can be brought to the weaning age, which is usually from eight to ten weeks, in good condition. After this time they should be put out on the range, in fresh-air houses, and every effort made to induce a continuous, uniform development.

GREEN FOOD NECESSARY.

PLENTY of green succulent food is necessary during the warm summer months. With free range this is usually supplied. Where small yards are used, and it is impossible to keep grass growing continuously, it is the best practice to divide the yard available, regardless of size, into two yards, alternating the growing of green crops in these yards. Peas and oats are a good early crop, but a permanent alfalfa soil probably makes the best green food, for, in addition to its succulence, it carries a high nitrogen content.

It is rarely profitable to attempt to rear many young chicks in close confinement, with bare yards, without green food, and an absence of shade. Where it is possible to give them an extended range and green sward abounds they can get plenty of grubs and insects, and can take plenty of exercise, which is conducive to health. The more range they have, the easier it is to keep the yard and soil green and free from contamination.

LICE-O KILLS LICHS ON POULTRY

President Northwest Squab Club Endorses Lice-O.

June 29, '14.

Shoreacres Ranch, Vancouver, Wash.

Gentlemen: I have used your Lice-O on some of my fine pigeons and Banded Rocks with most excellent results. O. A. WARREN.

Is applied but twice a year, while powder is applied twice a month.

Large Tube 50c Postpaid.

THE LICE-O CO.

286½ Washington St., Portland, Ore.

YOU CAN EARN \$50.00 PER DAY

with the Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours. Another record when 70 feet was drilled on 2½ gal. kerosene at 9c per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignites. Catalogue V2 REIERSON MACHINERY CO., Manfrs. Portland, Ore.

Portland Marble Works

PHILIP NEU & SONS, Props.

Established 1885.

We Carry the Best and Largest Stock of Monuments.

264-266 Fourth Street, Portland, Ore.

HELP FURNISHED FREE

We furnish Farm Help, Dairymen, Blacksmiths, Carpenters, Loggers, Foremen, Mill help and skilled help of any kind. We will let your contracts or ease your farm. Wire or phone rush orders at our expense and we will give you the benefit of our 14 years' experience.

PIONEER EMPLOYMENT CO.

14 N. Second Street, Portland, Oregon.