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DIRECTIONS

—FOR—

MAKING AND USING

—THE—

IMPROVED

COMMON SENSE INCUBATOR

—BY—

J. M. BAIN.

NEW CONCORD, OHIO.
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1883.

DIRECTIONS

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DIRECTIONS

FOR CONSTRUCTING THE

Improved "Common Sense" Incubator.

Take two boards, each four feet long, six inches wide and one inch thick, and two boards each two feet nine inches long, six inches wide and one inch thick, nail the ends together firmly, and you will have the sides of a box four feet long, three feet wide and six inches high, as in No. 1, Fig. 1.

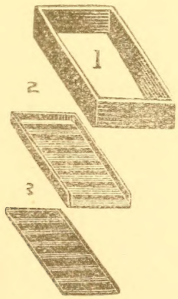

FIG. 1.

Now cover the top of this box with a lid made of boards one inch thick, plowed and grooved, or matched so they will fit closely together. Then for the bottom take a piece of zinc four feet long and three feet wide and nail securely with two rows of small nails for the bottom of the box. This makes a box four feet long, three feet wide and six inches high, with a zinc bottom. This box is called the heater.

Next make the egg drawer, by taking two pieces four feet long, four inches wide and one and one-half inches thick, and two pieces two feet eight and one-half inches long, five inches wide and one and one-half inches thick. Nail these together, making the sides of the egg drawer, four feet long and two feet eleven and one-half inches wide. Then cut twenty-three slats thirty-five and one-half inches long and one inch square and nail the twenty-three slats on the bottom of this drawer one inch apart. These slats are the bottom of the egg drawer Now this makes a drawer four feet long and two feet eleven and one-half inches wide and five inches high on the outside and four inches deep in the inside, with a slat bottom, as in No. 2, Fig. 1.

Now take a piece of wool sack, coffee sack or some other coarse, strong material, four feet long and two feet eight inches wide, draw it tightly over the top of these slats ond tack to the slats and ends of the drawer.

Now cut out of good timber two slats three feet seven inches long, one inch wide and half an inch thick, and two slats thirty-two inches long and one inch square, mortise the ends of the two half-inch thick slats into the ends of the inch square slats, making a frame three feet seven inches long and thirty-two inches wide. Take good heavy muslin, and draw it *very tight*, especially *lengthways*, over this frame and tack it on solid, lay this frame, muslin side down, on the coarse cloth in the egg drawer. On this muslin the eggs are to lie.

Next cut twenty slats two feet eleven inches long and half an inch square, then bore twenty holes half an inch in diameter in each side of the egg drawer, for the twenty slats to go in, these twenty slats should be one and three-fourths inches apart, so the eggs can lie between the slats, and the slats should be down just as close to the frame with the muslin on as can be, to allow the muslin frame to be moved easily between these

twenty slats and the slats that make the bottom of the egg drawer. Then place the eggs between the twenty half inch slats on the muslin cloth, then by moving this muslin frame two inches back or forward, you turn the eggs just half over or bottom side up.

Next take two boards four feet long, eight inches wide and one inch thick, and two boards two feet nine inches long, eight inches wide and one inch thick, nail these together, making the sides of a box four feet long three feet wide and eight inches high, being similar in shape to the heater, except two inches higher, as in No. 1, Fig. 1.

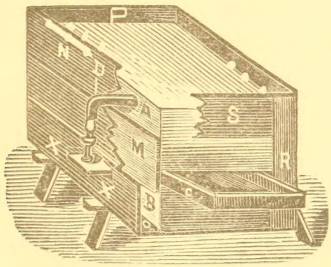

Fig. 2

Nail on a bottom of plowed and grooved boards, one inch thick. Now bore twelve holes in different parts of this bottom, one-half of an inch in diameter, and get twelve pieces of tin pipe seven inches long and half of an inch in diameter, and put in each of the twelve holes, they should extend up above the bottom six inches. These are the ventilators. Now fill this box containing the ventilators with saw dust, sand or bran, about five inches deep, or up to within one inch of the top of the ventilators. Mind this box has a bottom but no top.

Now set the egg drawer, C, Fig. 2, on top of the ventilator box, B, and then on top of the egg drawer, C, set the heater, A.

Now we want to arrange these boxes so the egg drawer, C, can be slid out and in, and the other boxes, A and B, maintain their position. To do this take two boards, each four feet long, twelve inches wide and one inch thick. Nail one of these boards, M, on each side of the heater, A, and the ventilator box, B, driving the nails into the heater and ventilator, but be sure and drive no nails in the egg drawer, as it should slide out and in freely between the heater and the ventilator. Having got these boards nailed solid, cut another board three feet long, twelve inches wide and one inch thick, and nail to the heater and ventilator, on the back end.

Now the heater and ventilator are connected on two sides and one end, of course the other end must be left open for the egg drawer to slide out. The bottom of the Incubator is now protected by the six inches of saw dust that is in the ventilator box B. We now want to protect the two sides, the back end and the top with eight inches of saw dust. To do this take two pieces of scantling four feet and four inches long, lay them down and set the Incubator on them, as shown by XX Fig. 2, so that the scantling will extend out eight inches on each side of the Incubator. See that the scantling do not cover any of the ventilator holes in the bottom of the Incubator.

Now take two boards four feet and eight inches long, eight inches wide and lay one on each side of the Incubator on these scantling, O, Fig. 2, for a bottom to the saw dust box, which will surround the Incubator. These boards will extend past the back end of the Incubator eight inches. Then by taking a board four feet long and eight inches wide and laying it across the back end of the Incubator, letting it rest on the ends of the two side bottom boards which extend back, the bottom of the saw dust box will be complete.

Now you want to make one end, P, and two sides, N, of a box to set on this bottom, the sides should be four feet eight inches long and twenty-six inches high, and the end four feet four inches long and twenty-six inches high. Now set this box on the bottom already made and nail it securely, and with two boards twenty six inches long and eight inches wide, you can close up the front end of the saw dust box.

R represents one side of front end closed, we had to leave the other side open in the engraving to show the way the heating pipe is put in, of course close up both sides in making your Incubator. Now by taking a board, S, four feet long and eight inches wide, you close the top of the end of the saw dust box. This now makes a box within a box with a space eight inches wide between the sides and the back end which is to be filled with saw dust.

Now go to a tin shop and get two pipes made, take a lamp chimney with you, the kind you use, any common lamp will do to heat your Incubator, and get the pipes made to suit your chimney, so you can slip the lamp chimney up in the pipe tight. A pipe two and one-half inches in diameter is a common size. The pipe should be twelve inches long then an elbow, then six inches more pipe, get two pipes like this D, Fig. 2.

Now make a hole the size of your pipe in the outside or saw dust box, eight inches from the front end and ten inches from the top, and make a hole the same size in the heater, the box with the zinc bottom, eight inches from the front end and two inches from the top, then slide the twelve inch part of the pipe through the hole in the saw dust box into the hole in the heater, A, Fig. 2, leaving the elbow and the six inch part of pipe on the outside of saw dust box, the six inch pipe pointing down, for the lamp chimney to be put in. Then

put the other pipe in the same way, in the opposite hind corner, these pipes should be seamed together, as soldering will melt with the heat of the lamp, then light your lamps and push the chimney as far up in the pipe as you can without making them smoke. If the lamps smoke, lower the lamps a little, that some air may pass around the chimney. Two lamps should keep up the proper heat in the coldest weather.

Now get six pipes three-fourths of an inch in diameter and fifteen inches long. Bore six holes in the top of the heater, three on each side opposite to where the heating pipes enter the heater. Bore the first hole three inches from the corner, the second twelve inches from the first and three inches from the outside, the third pipe twelve inches from the second and three inches from the outside. Then put the other three the same way on the other side, as shown by the little holes in the top of the heater, Fig. 2. Then put in the pipes and slide them down to within half an inch of the zinc bottom. These little pipes draw the heat from where it enters the heater to the opposite side, and distributes it equally throughout the heater.

If the lamps go out when the egg drawer is moved out or in, it is because the zinc bottom is too loose. Bore a hole in the centre of the top of the heater and punch a hole in the size of the bolt you will use, in the zinc directly below it. Then put in a bolt seven inches long, with the head below, and tighten up the burr until the zinc will not flop up and down any when the drawer is moved. Then by moving the drawer out slowly and steadily so as not to jar the eggs, the lamps will not trouble. Make the egg drawer so as to slide out smoothly and easily.

After putting the pipes in fill the saw dust box with saw dust, sand or bran even full, but right around the tin pipes the lamps go in, instead of putting saw dust be sure and put earth, as the saw dust might get afire. A little box nailed to the outside of the saw dust box to cover the tin pipe and elbow, and filled with earth, would save much heat.

Now your Incubator has six inches of saw dust or sand set underneath the eggs in the ventilator box, B, eight inches on each side and the back end of the Incubator, and eight inches on the top. This makes such a perfect protection that a change of forty degrees in the temperature of your Incubator room will not make more than two degrees inside the Incubator.

Be sure and get two *good Thermometers*, lay one in the front end of the egg drawer with the top end slightly raised, it should be one inch higher than the bottom end. Let the lower end of the Thermometer point towards the back end of the egg drawer, by pulling out the egg drawer four or five inches you can see in a few seconds how the temperature is. Then place the other Thermometer in different parts of the egg drawer and see if the Temperature is uniform. It will likely be hottest right under where the lamp pipes enter the heater. You can prevent this by laying a piece of tin one foot square on top of the zinc bottom right under where each lamp pipe enters the heater. Do this before you fill the saw dust in on top and it will save you removing the saw dust and top lid to heater. Or instead of tin you can lay from two to five thicknesses of brown paper on top the eggs where they are the warmest, you will learn in a day or two just how thick and how large a paper it will take. Remember it takes a large amount of saw dust to fill the Incubator, and when that saw dust is cold or frozen

it must take two lamps some three or four days to warm it up, but when it gets warm you will be surprised how little heat it will take to keep it so.

Torches, such as are used during political campaigns, make good Incubator lamps by putting common lamp burners on them.

This Incubator, as above described, will contain 250 eggs. To hold 500 eggs it should be made six feet long and four feet wide, the same otherwise, but remember that two Incubators that hold 250 eggs each is much better than one that holds 500 eggs.

ARTIFICIAL MOTHERS OR BROODERS.

Make a box four feet long, three feet wide and six inches high, cover the top with boards and the bottom with zinc, making a box just like the heater of the Incubator. Now take a piece of old cloth, tolerable heavy, an old horse blanket would be good, and cut strips four inches wide and long enough to reach all around the three by four box, or fourteen feet, and tack this cloth around the bottom edge of the box, it will then hang down about four inches below the box. Then cut this cloth every four inches. The box will then be surrounded with pieces of cloth four inches square. Now put a block two inches square under each corner of this box, then the little chicks can get in under easily by pushing in between the four inch strips of cloth. Then fix one tin pipe like the pipes to heat the Incubator, and one lamp will keep the brooder warm. Put a three-quarter inch escape pipe in each corner of the brooder to draw the heat over the surface of the zinc evenly. Ninety degrees is the proper temperature for a brooder. As you cannot get a lamp in the pipes if the brooder is on the floor, make a table a little larger than the brooder with legs six or

eight inches high, according to the height of your lamps, set the brooder on the table as you would on the floor, and by putting a board up to it, the chicks will very soon learn to run out and in.

Don't set any boards around the brooder to keep the chickens in, as they will crowd up in the corners and kill many. As the chickens grow put higher blocks under the brooder, so they can get under but not high enough that they can get on top of each other. You might cover the top of the brooder with saw dust, as it will then take less oil to to keep in up to about ninety degrees.

To keep the rats away, make a box four feet wide five feet long and one foot high, and put over the brooder at night. Bore some small holes in the top for ventilation. The brooder should be kept in a dry place and kept very clean. In pleasant weather put them out in your yard. You can put a box about the lamp to keep the wind from blowing it out. Dampness is very bad for chickens, but a barn floor will do nicely for the brooder. Clean the table, or false bottom, on which the brooder stands *daily*, and scatter some sand on it.

HOW TO USE AN INCUBATOR.

It is a wise chicken that knows its own mother in these days of "wooden hens," hot air, hot water and all other kinds of Incubators which are rapidly coming into use to bring forth the downy little creatures.

Before beginning operation with an Incubator you should decide the following questions in your mind:—

1. Will you give it the attention it will surely require at your hands?

2. Will you persevere sufficiently in your efforts to gain success?

This you must do, or better let it alone. Don't expect every egg to hatch. Recollect it takes experience to become proficient in anything. And many of our *most* successful poultry raisers met with many failures before they learned just how to manage their Incubators. The first four times that I filled the Incubator with eggs, I only raised one chicken. I had a different kind of an Incubator each time, so I could not say it was the fault of any particular kind of an Incubator, but all this time I was learning, and it will not take you long to become perfectly acquainted with the business, and then there is nothing that will pay you better. *Just keep trying* and you are bound to succeed. You must give it time and attention during the process of incubation in its early stages, and more particularly when the young chicks are emerging from their shells and during their early stages of growth.

There are a dozen little attentions required by the young chickens, these they must have. There is a trite saying: "If you wish a thing half done, send a boy, but if you wish it well done, do it yourself." This applies with great force to an Incubator. They can not be left to everybody to care for, you must give them your personal attention, in order to see that the following requirements are complied with :—

The eggs should be kept at a regular heat, not over 105 degrees, and not less than 102 degrees, for long periods.

After the third day the egg drawer should be taken out once a day and the eggs allowed to cool down to about 75 or 80 degrees, or lower would not hurt them. But when in the Incubator from 102 to 105 is the proper heat. The first twelve to fifteen days keep as near 105 as possible, the last five or six days 102 is the proper temperature, as the animal heat of the chick-

ens help to heat the eggs. Be careful not to get it too warm as over-heating is the great cause of failure with all Incubators.

The eggs should be turned every four or five hours during wakeful hours, and I generally get up between one and two o'clock at night and see how the mercury is and turn the eggs.

With the turning arrangement which we direct you to make, you can turn five hundred eggs in five seconds, so the time is nothing.

After the third day the eggs should be moistened, this you can do by setting two or three pie pans of water on the saw dust under the eggs in the ventilator box. From the ninth to the twelvth day sprinkle a little water, warmed, on the eggs by hand, once a day in addition to what evaporates from the pans. From the twelvth to the fifteenth day sprinkle twice a day, and from the fifteenth until hatched, three times a day as moisture does much to make the shell brittle, and assists the chicks in getting out.

You can keep your Incubator in an out building or cellar, or some unoccupied room. Have it as convenient to look at occasionally, as possible. Don't keep any fire in your Incubator room, as the temperature will vary less without fire than with it, and the Incubator is so well protected and the saw dust holds so much heat that a change of forty or fifty degrees in the Incubator room will not effect the eggs more than one or two degrees, and that will do no harm.

See that the six escape pipes in the top of the heater are at least one-half an inch above the zinc bottom. If they get clear down on the bottom it shuts the draft clear off.

Fill your lamps at six o'clock, night and morning Then turn up the lamp to about the right height--

this you will soon learn—after about ten minutes look at the Thermometer, do not let it get above 105 for any length of time. When you once get it all right it will stay that way all day or night, and you will only need to look at the Thermometer when you turn the eggs.

Ventilation is also quite essential. The twelve tin tubes in our Incubator not only ventilates but admits the cool air under the eggs just where it is needed. Be sure the ventilators are always kept open, and see that in setting the Incubator down you do not cover the ventilators on the bottom.

You cannot always get fertile eggs. In five hundred eggs there may be often one hundred eggs not fertile. After the eggs have been in two days you can, with a good egg tester, tell every egg that is not fertile and take them out and sell or use them. You not only save the eggs, but you can replace them with fertile ones

For $2.50 you can get a fine egg tester from A. M. Halstead, Rye, New York. Or for 50 cents you can get a good egg tester from J. M. Bain, New Concord, Ohio.

When the chickens hatch they should remain in the Incubator until they get nicely dried off, or about twelve or fifteen hours. If you see the chickens begin to pant, take such out immediately and put them in the brooder. They should all be put in the brooder before they are twenty hours old, anyway.

When about twenty hours old they should receive their first food, which should be hard broiled eggs or bread crumbs wet with milk, not feeding more at a time than they will eat up clean. If feeding corn meal it should be well soaked before feeding, for corn meal not well soaked has killed many chicks, as the

meal swells in the craw producing disease and death. Feed regularly and a little at a time, say at five, nine and twelve o'clock, a. m., and three, six and nine p. m. As they grow, dry grain may be substituted for wet food, as it will do much to prevent gapes and other diseases.

HOW TO CAPONIZE CHICKENS.

Caponizing the young cockerels is one of the secrets of success in poultry raising for profit, as the capons will feed to ten or twelve pounds in six or eight months, and will bring an advanced price in any market. As for quality, an epicure is judge.

The mode of procedure, to be successful, is to take all the cockerels at three or four months old, keep them from feed in the morning so that the bowels are empty for, if they are fed, and full, you will almost be sure to cut the intestine while making an incision and cause death.

The mode of operation is conducted in the following manner: Have all the birds in a convenient place. Let your assistant hold the bird on a piece of board, the left hand holding the two wings firmly, the right hand holding the left leg of the bird steady, with back of the bird to the operator, the feathers are picked from the edge of the last left rib, and an incision is made within an inch of the back bone, the cut not any larger than will admit the forefinger. See that the finger nails are cut close, as a scratch will bring on hemorrhage of the intestines. Press the finger of the left hand close to the backbone, and two round balls will be found adhering to the membrane of the spine. Move the finger over the lower or right ball, tear both gently upward, bring both over the edge of the incision with the right finger and thumb tear or twist them off,

keeping the seminal cords firm between the finger of the left hand. Cauterize these with White's Carbolic Acid Crytal, and return them to their place. The two testicles resemble a white cranberry, and are about the same size. Put three stitches in the incision made with the knife, and ten to one the chicken will walk away and only turn round to pick the part, wondering what is the matter.

Place plenty of cold water and broiled food within reach, and keep them confined a few days then give them liberty. Feed well three times a day and the delicious meat will be laid on with great rapidity, as they do not pay any attention to the rest of the poultry but spend their time in ease and quietness. They get so fat and lazy that they do not fly on the roost, but sit on the floor.

Pullets are also converted into poulardes. The bird is held in much the same way as the cockerel, but the incision is made a little lower down, near the flank. On the incision being made the lower bowel will be found in the way, and close behind it the oviduct, which is of a redish color, will be seen. With a piece of wire doubled and turned like a hook, draw the oviduct up and cut across. This will prevent the chicken from producing eggs and entirely stops the development of the ovary and causes the bird to attain a great size. In the case of pullets I think the operation inadvisable, as it prevents laying, and eggs are money any time, and always valuable.

It is well to practice the operation repeatedly upon chickens that have been killed, so a degree of expertness may be attained before attempting the operation on the living fowl.

The usual price obtained in the East is thirty to forty cents a pound, during the spring. Mr. W. H. Todd says that a well bred capon at nine months old

should weigh ten pounds each, and that there is no branch of poultry business pays better. He shipped a lot of thirty capons to New York, and realized a net profit of $75 on the lot, or $2.50 clear.

THE CARE OF POULTRY.

Mr. Charles Layman, of Clarenda, Iowa, gives the following simple directions for the care of poultry:

In raising poultry or stock, it should be the aim of every one to keep it healthy and improve it. You can do it very easily by adopting some systematic rules. These may be summed up in brief as follows:

1. Construct your house good and warm, so as to avoid damp floors, and afford a flood of sunlight. Sunshine is better than medicine.

2. Provide a dusting and scratching place where you can bury wheat and corn, and thus induce the fowls to take needful exercise.

3. Provide yourself with some good healthy chickens, none to be over three or four years old, giving one cock to every twelve hens.

4. Give plenty of fresh air at all times of the year, especially in summer.

5. Give plenty of fresh water, daily, and never allow the fowls to get thirsty.

6. Feed them systematically two or three times a day, and scatter the food so they can't eat too fast or without proper exercise. Do not feed more than they will eat up clean, or they will get tired of that kind of food.

7. Give soft feed in the morning and the whole grain at night, except a little wheat or cracked corn placed in the scratching place to give them exercise during the day.

8. Give them a variety of both dry and cooked food. A mixture of cooked meat and vegetables is an excellent thing for their morning meal.

9. Above all things keep the hen house clean and well ventilated.

10. Do not crowd too many in one house. If you do, look out for disease.

11. Use Carbolic Powder in the dusting bins occasionally to destroy lice.

12. Wash your roosts and bottom of laying nests and whitewash once a week in summer and once a month in winter.

13. Let the old and young have as large a range as possible—the larger the better.

14. Don't breed too many kinds of fowls at the same time, unless you are going into the business.

15. Introduce new blood into your stock every year or so, by either buying a cockeral or sittings of eggs from some reliable breeder.

16. In buying birds or eggs go to some reliable breeder who has his reputation at stake. You may have to pay a little more for birds, but you can depend on what you get. Culls are not cheap at any price.

VARIETIES.

What varieties to keep is a question which perplexes many. First decide what branch of the business you wish to follow and then we can tell you what varieties you need to accomplish what you desire.

If you wish to keep chickens to produce eggs for the market, the Leghorns, Polands, Hamburghs, Houdans and Spanish are among the best. The Leghorns and Spanish are not well calculated for the icy regions, unless well protected. But the above varieties are all non-sitters and great layers.

If you wish to raise chickens to sell alive when from six to ten weeks old, or when broilers, the Houdans are undoubtedly the best, as they will weigh more at that age, are better feathered and far more attractive than any other breed.

The time to raise Houdans for early market is from January 1st to June 1st.

If you wish to raise a variety to ship, dressed, the Langshans are unquestionably the best, as they look much the best when dressed, and have a peculiarly good flavor when cooked that makes them sell much higher than any other variety when dressed.

The Langshans are very large and handsome, being almost as attractive as the Houdans and much larger, these two varieties are undoubtedly the best varieties to raise for the market.

WHAT IS GOOD FEEDING?

Something like this: A warm breakfast, consisting of corn and oats ground together, and wetted with half its bulk of good sweet wheat bran. Of this give about as much as they will eat up clean. Then a drink of fresh water from the well or spring, after this as many oyster shells, cracked, as they want to eat. If you can not get oyster shells, keep lime and gravel where the chickens can have constant access to it. Now suspend a head of cabbage within easy reach of the hens—they will know what to do with it. Go to the barn and get a sheaf of oats or wheat and put it where the hens can get at it—they will know what to do with it, too.

At noon give them a little buckwheat or screening. Throw it among the straw they have been scratching at, then give them more fresh water. Then at night a full feed of corn warmed or wetted with hot water.

This bill of fare repeated every day with what variation you can make, will fill your caskets with eggs and your pocket-books with money.

Nothing is better to keep poultry in good health than raw onions chopped fine and mixed with other feed twice a week. To fatten, feed cooked feed and feed warm. Give equal parts of beets or potatoes and corn meal well cooked and feed three times a day with an occasional mixture of barley and oats. Give plenty gravel, charcoal and lime. Shut in a dark dry place, only give them light when eating, they will fatten much better in darkness than in the light, as they remain quiet nearly all the time. You can fatten in ten days as fat as need be for any market.

To fit poultry for show, feed buckwheat. Russian sun-flowers planted in the yards are a great assistance. The chickens will pull the seeds off themselves, and it gives the plumage a peculiar lustre which is very beautiful. These do not want to be fed alone, but with other feed.

Give the chickens all the fresh water they will drink. Keep the water in iron vessels or throw some old iron in the drinking vessels.

DIRECTIONS FOR SHIPPING.

We herewith give a few practical hints in regard to preparing, packing and shipping poultry for New York markets. Fully one-half, if not more of the risk of loss in shipping goods may be avoided by paying particular attention in preparing and packing, so that the goods may arrive in good order, and when opened present a handsome appearance.

Mark plainly on the outside of each package its contents, and, if convenient, its gross weight and the tare. Neatness in marking is very important. The

shipper should strive to have his goods strike the eye of the buyer favorably at the first view.

Receipts should always be taken from the express or transportation companies, and full advices, with a correct invoice of the shipment should always, without delay, be forwarded by mail. There is nothing so vexatious or intolerable to a Commission House as the receipt of consignments not properly and distinctly marked and advised.

Every shipper who designs to make a business of forwarding to this market good goods, and who expects to obtain the best prices, should have a brand or mark of his own. By so doing, he may establish a reputation for his goods which will be available to him.

POULTRY.

In preparing poultry for market do not feed for at least twenty-four hours before killing, as food in the crop injures the appearance, is liable to sour, and purchasers object to paying for this worse than useless weight.

Opening the veins of the neck is the best mode of killing, and let it bleed freely, as poultry not properly bled will not have a bright healthy appearance. The intestines or crop should not be "drawn."

For scalding poultry, the water should be as near to the boiling point as possible without actually boiling. The bird, being held by the head and legs, should be immersed and lifted up and down in the water three times—this makes picking easy. When the head is immersed it turns the color of the comb and gives the eyes a shrunken appearance which often leads buyers to think the fowl has been sick. The feathers should then be at once removed, pin feathers and all, very cleanly and without breaking the skin. It should

next be "plumped," by being dipped about ten seconds into water nearly, or quite boiling hot, and then at once into cold water about the same length of time.

Most of the dressed poultry sold here is wet picked, and such is generally preferred. But very fat and handsome turkeys, dry picked, sell well at Thanksgiving and Christmas.

Great care should be taken to avoid cutting or bruising the flesh or bones. It should be entirely cold but not frozen before being packed. This is a matter of importance, for if packed with the animal heat in it, it will be almost sure to spoil. If it reaches market sound without freezing, it will sell all the better.

In packing, when practicable, use hand-threshed dry straw. Be sure that it is clean, free from dust of any kind and entirely dry. Place a layer of straw at the bottom, then alternate layers of poultry and straw, taking care to stow snugly, backs upward, legs not doubled up under the body, but straightened out. Take a hand full of straw and wrap around the body of the fowl under the wings, which keeps the wings from touching the body, as under the wings is where the fowl first begins to spoil. Then wrap a wisp of straw around the body and wings, to hold the wings in position. Fix the package so that the cover will draw down very snugly upon the contents, to prevent shifting or shucking on the way.

Boxes are the best packages, and should contain from one to two hundred pounds. Larger boxes are inconvenient, and more apt to get injured. The objection to barrels is that the poultry is apt to be much bent and twisted out of shape, they answer better for chickens and ducks than for turkeys and geese, but when packed in barrels should be packed on the side, keeping the legs out straight. Straw should be between

the poultry and sides of package to keep from freezing though in very cold weather this cannot always be avoided. In packing large lots avoid putting more than one kind in a package, and mark the kind on the cover.

FROZEN POULTRY.

In preparing frozen poultry for the late market, dry pick the poultry, as it will keep longer, hold its color better and command better prices. The head should be left on, and the manner of packing much the same as in general directions, except no straw or packing of any kind should be used. Boxes of the following dimensions are preferable: say four feet long by two feet wide and fifteen inches deep, outside measurement. Use new inch lumber well seasoned, smoothly planed for the inside of the package. They will pack two layers of turkeys or three of fowl. Larger size packages are inconvenient to handle, and do not meet with as ready a sale. Pack a layer of poultry in as many boxes as will be required to make one layer for each day's work, when frozen sufficiently, the second layer may be packed in like manner. When full, the covers should be placed on and snugly nailed, and the boxes placed together and well covered with straw—say two or three feet in depth, or should the weather moisten and thaw when the boxes are but partly filled they should be protected in the same way, in which manner the poultry can be held and forwarded with entire safety. The packing should be done in a cold dry room, separate from the slaughter house, and not in the open air, as the wind is apt to turn the poultry dark. In dressing ducks and geese, after dipping them three times, as above described, wrap them quickly and tightly in a flannel cloth from three to five

minutes and then rub the feathers off quickly as possible, and they will come off as dry and clean as you can wish. It does not hurt the poultry to remain in the cold water for several minutes. Keep the water cold by changing as often as the water gets warm.

DISEASES OF YOUNG CHICKENS.

Mr. Joseph Wallace gives us the following valuable receipts:—

GAPES.

As soon as we see symptoms of gapes we give the birds water to drink, which is strongly impregnated with camphor, thus giving to the chickens that which was a favorite medicine with our great grand-mothers, "Camphor Julep." The treatment seems to explain itself. The gapes or gaping is caused by the presence of small red worms in the wind pipe. No medicine can reach them unless in the form of vapor. An hour after the chicken has swallowed the pill it smells of camphor. Camphor is a very strong vermifuge and the worm dies.

Another recommends to melt a tallow candle and mix it with a quart of thick oatmeal porridge and feed it to the chicks affected. This is a very simple remedy If it don't kill the gape worms, it will do much good otherwise.

Some fanciers give five or six drops of spirits of turpentine three times a day to their chicks until a cure is affected There is no doubt but turpentine and camphor are destructive to intestinal worms and parasites.

Another remedy much in vogue with poulterers is pinching the throat. In doing this, one must be careful not to injure the rings of cartilage which compose the windpipe of the chicken, by a sudden pinch. The pressure on these parts should be gentle and steady

relieving the bird when it gasps, but never forcibly pinch the wind pipe with the belief that quick and rough treatment is necessary and the surest way to kill the worms.

Fumigation, when skillfully applied, is an easy treatment to expel the gape worm. This is done by taking some carbolic acid on a large spoon, and place it over a lamp until the fumes begin to arise, then hold the chick's head slightly downward over the fumes, and at the same time gently press its sides, to imitate respiration until nearly suffocated. Spirits of tupentine or creosote used the same way is good.

We have seen chickens cured by taking two parts flour of sulphur and one part of finely pulverized alum by blowing the mixture down their throats a few times.

There are scores of other so-called cures, but we consider them untrustworthy to be recommended. As the subject is very important to poultrymen, we have devoted a large space to the same in hopes that some of the remedies would at least be effective.

PIP.

This is a horny scale that appears on the end of the tongue. It may be removed with the finger nail or pen knife, and is perhaps, caused by some stoppage of the nose or head. Use a wash of Labbaraques' Solution, which can be got at any drug store. You can tell this disease by the piping, wheezing noise the chicken makes in breathing.

ROUP.

This disease is contagious and will spread through a flock, resulting in the destruction of large numbers. If the ailment is taken on hand at the very start it is not difficult to manage, but when it is not attended to promptly, it will entail a great deal of trouble and loss. In this case, as in many others, prevention is

better than cure. Where fowls are properly housed in comfortable, dry, sunny quarters, Roup is seldom troublesome. If, however, a fowl is seen that shows symptoms of Roup, it should be separated and put into a dry, warm, clean place, and have its eyes, mouth and throat bathed with a solution of sulphate of zinc of a strength of ten or twelve grains to the fluid ounce of water, or a solution of carbolic acid of ten grains to the fluid ounce of water. These two preparations may be used in alternation. The fowl is to be fed on warm, soft food, into which a smart sprinkle of cayenne or black pepper is mixed. Put a few drops of hartshorn in the drink every time the fowl is fed, and it will soon be well. It will not pay to doctor a fowl unless it be a favorite or valuable one. If it is doctored at all it ought to be carefully and conscientiously done, or the fowl should be killed and buried. I have used the above in very bad cases, and never had it to fail.

LICE.

The surest way to destroy lice on chickens, or stock of any kind, is by using Bisulphate of Carbon. Hang to the roosts of fowls a few small bottles of the above, taking out the corks. Leave open a ventilator or two and it will do no harm to stock of any kind.

When all the stock is out close all ventilation, and in a few hours there will not be a louse left. It is cheap, twenty-five cents worth cleared my barn and chickens and everything else from lice in three days. A light must not be put very near as it is very inflammable. I find it a sure cure for Roup. The first time I used it, my yard was full of Roup, but in three days not a case could be found. That was in November.

Noting the effect upon my fowls, I recommended it to others and the result was the same, so that I feel safe in advising its use.

Kerosene oil and lard mixed and rubbed on the neck and under the wings, will kill lice on all kinds of fowls. If your little chicks begin to droop, examine for lice. If hatched under a hen they may need to be greased for lice when two or three days old, if hatched in an Incubator they are not apt to be troubled with lice.

THE DOUGLAS MIXTURE

Is a good constant tonic, and made thus: Sulphate of Iron, 1 lb., Sulphuric Acid, 2 oz., water 1 gal. Mix and dissolve. Dose, one to two teaspoonfuls to a pint of drinking water.

For drink, in cholera, give Carbolic Acid, 1 dr., Glycerine, 1 oz., mix in a quart of water. Of this mixture use two tablespoonfuls to a gallon of water, allowing no other drink.

A good feed is to soak bread in milk, well dusted with black pepper, and scalded by burning it with a red hot iron. This is also an excellent feed for fowls that have the diarrhœa.

CHOLERA.

There is no infallible remedy known for chicken cholera. There are many so-called cures that will, if given in time, save the fowl, and perhaps check its spread among the flock. The investigations of Pasteur, Woritz, Peroncito and Touissaint, show that medicine is almost useless at an advanced stage. However we have proved that timely attention to this disease by giving the following medicine has been very satisfactory: Carbon Charcoal, 1 lb., Sulphur, 1 lb., Sulphate of Iron Copperas, 1-2 lb., Calomel, 10 gr., Salicylic Acid, 1 gr. Grind to a fine powder. Dose, one tablespoonfiull to a dozen fowls once a day, to be given in moist meal.

CHEAP POULTRY HOUSES.

We find that the best and most successful plan to manage and make fowls pay is to scatter them over a large range in fields and orchards. For this purpose, cheap, convenient and comfortable houses are best. My plan is to build 16 feet long and 8 feet wide, 7 and 1-2 front, facing south, and 4 and 1-2 back, boarded upright and battened, with a shed roof, shingled. Sills are 2x4 inch plank, halved together at corners. Plates same size. Rafters, 2x2. Lay the sills on sleepers and on these lay a tight floor, which cover with dry earth, 4 to 6 inches deep, removing and renewing twice a year. This keeps fowls dry, warm and healthy. Place an entrance door near one end on the front, and at least two windows of size 8x10 lights. Divide into two compartments with partition doors across the middle. Fix ventilators at the highest point in each end, sheathed to exclude storm and wind. Erect roosts 20 inches high, for twenty fowls, with a movable nest or two, and a box partly filled with dust and ashes, and you are ready for business. Forty large fowls can be accommodated and thrive well. Since the house is double, we are in shape to run two breeding yards.

DIRECTIONS FOR SHIPPING EGGS.

To have eggs bring high prices you must get them to market while they are perfectly fresh. To do this you must gather them every day without fail; do not leave any nest egg for hens to sit on, and ship twice a week, or at least once a week. Eggs gathered in that way and shipped that way, will bring five cents a dozen more than store eggs.

The question may arise in your mind, will it pay me to ship my eggs to the east? It certainly will, in

many parts of Ohio eggs sell as low as eight and ten cents a dozen in June and July, but in New York good fresh eggs never sell lower than twenty cents a dozen, and seldom less than twenty-five cents.

Let us take a case of thirty dozen eggs to illustrate You will sell them at home for ten cents a dozen, which is a good fair price for July, thirty dozen would bring you three dollars. You ship them East and twenty-five cents a dozen will be no higher price there than ten cents in the west. Thirty dozen at twenty-five cents a dozen would be $7.50. Freight on thirty dozen eggs from Ohio, Indiana or Illinois to New York is two cents a dozen, or sixty cents for 30 doz.

Commission Merchants will charge you five per cent or thirty-seven and a half cents for selling thirty dozen eggs. Taking the freights and commission, which is ninety-seven and a half cents, from seven dollars and a half, and you have $6.47 left, or over twice as much after paying all expenses, as you would have to sell at home.

When eggs get higher in the west they get proportionately higher in the east, so it will pay you about as well to ship one time as another. Eggs packed in barrels bring about one cent a dozen more than eggs packed in crates. If you do not get a barrel a week yourself, two or three neighbors can put their eggs together and fill a barrel easily.

Ship both poultry and eggs to a firm that makes a specialty of poultry and eggs, you will get a higher price. Do not ship to a jobber, although jobbers do the heaviest business; they sell in large lots and low prices. You want to send your goods to those who sell in small lots at high prices, or in other words, ship to a Retail Commission House. Guinea eggs and very small hen eggs will bring but half price.

EGGS FOR HATCHING.

The North American Poultry Association has made arrangements with its members to furnish eggs to those who are desirous of starting in the poultry business at the following very low prices: Fourteen eggs —or seven eggs of two different varieties—$2.50, nicely packed in Buckeye Egg Baskets and safe arrival guaranteed. We warrant the eggs to be fresh. The breeding pens from which these eggs are furnished are not excelled by any in the country, being from pedigreed stock and from fowls that will score over 85 points. We will furnish you eggs from any of the following varieties: Langshans, Houdans, Light and Dark Brahmas, Buff Partridge, Black and White Cochins, Plymouth Rocks, Colored, Silver, Gray and White Dorkings, White, Brown and Dominique Leghorns, White Faced Black Spanish, White Crested Black Polish, Silver Polish and Golden Polish, Silver Spangled Hamburgs, Golden Spangled Hamburgs and Golden and Silver Penciled Hamburgs, Andalusions, White, Black and Mottled Javas, La Fleche, Black Breasted Red Games, Irish Blue Games, Yellow Duck wing Games, White Games and B. B. R. Game Bantams. If you want any other varieties, write what you want, and we can most likely furnish them. White and Brown China goose eggs and Toulouse goose eggs, 50 cents each. Mammouth Bronze turkey eggs, from hens weighing 23 pounds and gobblers weighing over 40 pounds, eggs 50 cents each. Imperial Pekin and Rouen duck eggs, 25 cents each.

Send in your orders for eggs immediately, and tell us about whom you will want them. You can perhaps tell within two or three weeks of the time you will want them. We would not advise you to set eggs before April 15th, and from May 1st to June 1st, is per-

haps the best time.

Ferrets and rabbits of various kinds. Send money with order. We will acknowledge the receipt of money promptly, and by ordering immediately, you can get the eggs exactly when you want them. Should anything occur that we could not furnish the variety of eggs ordered, we will return your money promptly.

Address all orders to the Sec'y of the N. A. P. A. New Concord, Muskingum Country, Ohio.

J. M. BAIN, SECRETARY.

HOW TO USE BAIN'S EGG TESTER.

Lay the egg on its side and push the large end of the Tester over the egg. Place the small end to the eye and look toward the sun, move the head up and down and you will see a dark spot floating to the top, after three days this is quite visible in a fertile egg. An egg that is perfectly clear, after being in the Incubator three days, is not fertile.