INCUBATOR AND BROODER CHICKS.

C. E. MATTESON, Pewaukee, Wis.

As I understand the real meaning of this subject, as placed upon the program, it is to draw out, if possible, the advantages and disadvantages of the artificial practice of hatching and brooding chicks. From the sixteen to as strong as those hatched by years of actual practice I have had in natural methods? I always answer

Dear Gaston and his Mates. A colony of Barred Plymouth Rocks hatched in incubators and raised in brooders, and their ancestors back of them for sixteen years, on the poultry farm of C. E. Matteson.

this direction, I am fully convinced that the advantages far supersede the disadvantages and that modern poultry farming today cannot be carried on to any great extent without the aid of the incubator and brooder; nevertheless, I would not have you think this with an emphatic “yes;” still I will also say I believe that fully seventy-five per cent, of the chicks hatched by machinery are weaker and have less vitality than those hatched by hens. This, of course, is somewhat of a strong statement, but I
believe I am right. Allowing this to be a fact, we must exert ourselves a little to see what is the trouble.

even capable of sending out lucid instructions as to just how the machine should be operated. They will prob-

The Incubator.

From the most careful inspection that I have had the opportunity of giving (and that is not a little I can assure you), I find that fully fifty per cent. of that weakness in chicks is occasioned by incubators that are placed upon the market by parties having little or no experience in this practice. In a majority of cases they are not ably place their whole stress upon some foolish egg-turning apparatus, or perhaps they have discovered that by the combination of several different metals in one it has great expansive powers and when used in the form of a thermostat as a regulator how splendidly it works in every respect; thus placing their whole stress upon a few strong points of their machine, there-
by obscuring the weaker or undesirable parts.

Then the other twenty-five per cent. of the weak hatched is occasioned by these people who always know it all and will pay little or no attention to instructions, which is sure to result in mismanagement and weak chicks.

So I will say that unless we can have an incubator that will give us as large a percentage of good, strong chicks as old "Biddy" can, we certainly should have no use for that machine, just for this reason. If anything has happened to the machine which has resulted in a poor hatch, it has more or less lowered the vitality of those that do hatch. You see they all have to be subjected to the same treatment, be it the carelessness of the operator, or the faulty make-up of the machine. I am not here to say which, but whatever it may be, it is just as sure to weaken those chicks that do get out as it is to kill those that never hatch at all, and if indulged in

Home-made incubator; hatch just out. 72 chicks from 77 eggs. Now owned by Miss Abby M. Galloway, Whitewater, Wis., who hatched with same machine, first experience, 163 chicks from 200 eggs put into machine.

It has been said, and probably well said, that the greatest right of the child is to be well born. I think that this should be brought to bear on our chicks, by saying that they have an equal right to be well hatched, and if anything happens in any way to deprive our chicks of this right, we cannot expect them to be of the same usefulness as when properly hatched.
from year to year, saving your breeding stock from these poor hikes, it is only a matter of a short time before you can scarce hatch a single chick.

When you have a nice hatch, do not be in a hurry to get them out of the incubator. An incubator that will not safely take care of chicks at hatching time for at least thirty-six or forty-eight hours after the hatch is all result in blood poison and the death of the chick.

**Brooders.**

Be sure that your brooders are all warmed up for the little chicks, at least a few hours before they are placed in them, place them immediately under the hover and leave them to come out at their own sweet wills.

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**Home-made brooder just loaded with newly hatched chicks at the poultry yards of C. E. Matteson.**

Those that do not come out at feeding time, say after three or four days, I simply pinch their heads a little. These you see are the ones that old "Biddy" usually kills in the nest, so in the machine we are not able to detect them until they are a few days old. To some this may seem cruel, but I consider it humane, for they are sure to constantly perplex the operator.

We always give the chicks the run.
of the brooder floor for at least the first two days of their lives, by that time they have become accustomed to the surroundings of their new stepmother and can safely be given the run of the pen inside until they are a little stronger and can be let out doors. Now, when I say “out doors,” I mean just what I say, be it winter or summer, even in our coldest weather in February or March there are but a few days when we cannot get them out doors for at least a short period during the warmer part of the day. It hardens them off and gives them good appetites.

DISCUSSION.

Mr. Matteson—There have not been a half dozen days this winter but what, in the warmer part of the day on the south side of the brooding house, with a little straw at the inlets, the little chicks run out for just a few minutes, and in again, and this gives them exercise, health and strength.

Question—What make of incubator do you recommend to the average farmer?

Mr. Matteson—I recommend an incubator that will give you a uniform temperature in all parts of the egg chamber and which is properly provided with ventilation and moisture, also a good regulator. Those are the four essentials of an incubator. There is no reason why anybody should be imposed upon with these cheap machines. By putting in several glasses in several different places, you can easily test the temperature. You cannot to a certainty depend on indirect regulators.

Mrs. Howie—Suppose you live at a distance from where they are sold and would like to know the name of the best machine? You have had experience and we would like to know of something that you have found reliable.

Mr. Matteson—I could not answer that question as quickly as I would have done two years ago. The machine I have been in love with has been driven out of the market by cheap machines, that was the Monarch. The hot air machines do good work on a small scale, but to say that they will do equally as good work on a large scale would be putting it too strong.

Supt. McKerrow—I understand you would recommend a hot water machine?

Mr. Matteson—By all means. There should be no difference so far as results between the large machine and the small machine with the hot water system, whereas with the hot air machine it has been demonstrated that you cannot force the hot air to the different parts of the machine to get a uniform temperature.

A Lady—How about moisture in your incubator?

Mr. Matteson—That must be governed largely by the seasons of the year, the amount of ventilation that you have to give at that particular season of the year. The warmer the weather the more ventilation you have to use, and of course this ventilation carries off the moisture. Whenever at any time you see, by using your egg tester, that you have evaporated the eggs so that your air sack occupies about one-fifth of the inside of the egg, that is the time to apply moisture; put in wet sponges or moisture pans. You have got to be guided by that. Of course, incubator manufacturers send out instructions in regard to this, but they don’t know the circumstances, they don’t know the season of the year you are going to run your incubator, and so really that question has to be studied out under the circumstances that you are operating your machine.

Question—Do you recommend hatching in the cellar?

Mr. Matteson—Yes, providing you have a good, dry cellar, I prefer it as a place to run the incubator.
Mrs. Howie—Perhaps Mrs. Kedzie-Jones might tell us her experience.

Mrs. Kedzie-Jones—I have had rather a peculiar experience. Running my incubator this last month, my chickens are almost three weeks old, I got a ninety-two per cent. hatch, that is, I got one hundred and seventy-seven chicks out of two hundred and three fertile eggs. I had my incubator in an upstairs room on the second story from the ground, and I used no moisture whatever.

Mrs. Howie—that is my experience. We could do nothing in the cellar, but on the second floor we had good success.

Mr. Matteson—Undoubtedly the reason why is that this season of the year there is more moisture in the air than in the dry part of the summer. If you should attempt to run those machines in the summer months in the same room, you would not meet with the same success. Again, the probability is that when you tried the cellar it was too cold. I would just guess that, and your machine not being a thoroughly packed machine, you did not get your temperature uniform.

A Member—The house is brick veneered and I took as good a room as we had, a room we use in the warm weather for a bathroom, and we, of course, used some moisture with the heat. One of the greatest troubles I find is to get pure kerosene oil, which I think is very important, then have your lamp perfectly good and be sure to have plenty of moisture in your cups that you use around the lamp. Then I don’t think you will have any trouble, but I am very much against any cellar business.

Mr. Matteson—It is not the cellar then, it is the fault of the machine.

Mrs. Howie—What is the name of the machine you use?

The Member—we have three; there are two Bantowns, and I don’t know that I can name the other one, I got it second-handed, and it hatches almost the full extent of what we put into it.

Mrs. Howie—Wouldn’t you advise medium sized machines rather than small ones, or very large ones holding three hundred or more eggs?

Mr. Matteson—I would, if it is hot air; but if a person has work for a large machine there is no reason why he should not use a large machine if it is hot water. He can hatch three hundred or six hundred just as well.

Mrs. Kedzie-Jones—What temperature do you keep your incubators?

Mr. Matteson—we start at 103. The machine we use at the present time is top heat entirely and we run it at 103. We aim to keep it well up. With the Monarch, where it was top and bottom heat, I had better results by running it 102 the first two weeks. With my machine the temperature is sure to rise a little above that the last week, the animal heat that rises from the chicks is almost sure to bring the temperature a little above that.

Mr. Convey—Sometimes you can’t get the same temperature in both ends of these large machines where they are partitioned off. How can you adjust them?

Mr. Matteson—that is very easy to adjust. Just raise the end of the machine that is coldest one-half an inch and that makes the difference of one degree always. If the boiler end of the machine is 102 and the end opposite is 104, raise the boiler end just one inch and that makes a difference of two degrees, and you even up the temperature.

Mr. Convey—if the air gets into the water tank?

Mr. Matteson—it destroys the regulation where you are using water, it disturbs the circulation of the water as well. There is one thing you should be careful about in the use of the hot water machine, and that is to get the air cut.

Question—are you using the same machine that you had a model of up at Appleton four years ago?

Mr. Matteson—yes, I am, with the
Monarch regulator. I use machines that I build myself.

Question—In your opinion, what is the difference between air heated by steam or hot air or by a furnace or hot water?

Mr. Matteson—I never have used steam, it would get too hot, you couldn’t use it.

Question—Well, as between water and hot air, which destroys the most moisture?

Mr. Matteson—There is no doubt but that the air from a hot air machine is drier than from the hot water machine.

Supt. McKerrow—You said that these incubators should be tested by placing thermometers in different parts of the machine. Should not the thermometers themselves be tested first?

Mr. Matteson—Yes, and that is very important and easy. The best place to test incubator thermometers is to place them in warm water that has been warmed up to about 103. If they all record alike, you can use them for this test. If they do not, simply mark each one so that you know the variation.

Question—What temperature do you keep your brooder?

Mr. Matteson—In the winter we begin at 106, but in warm weather not over 93.

Mr. Rietbrock—Since most of us are small farmers, living on our farms, and want eggs for our own use and some to store, should the brooding not really be left largely to the setting hen rather than that the small farmer should go into the matter of artificial brooding, I mean 90 per cent. of such a farmer audience as this is, would it not be safer to just let them follow the processes heretofore known by hatching with the setting hen?

Mr. Matteson—I would say yes, if you are not particular at what season of the year you are to get these chicks out. We all know there is more profit in one early hatched chick than in a dozen late hatched. You have got the business under full control. I have over eight hundred eggs in my machine ready to hatch as soon as I get home, whereas if I were depending upon the hens, I would have to do it as they will. Still, unless they are going to study it in detail and only going to get out a few chickens in the late season of the year, they had better stick to the hen.

Mrs. Howie—There has been a request that you give your plan of an ideal poultry house for the beginner.

Mr. Matteson—I recommend a house—for a winter-laying house, of course, there is a difference. The winter-laying house is the best possible place to breed cholera in the summer time and you should use scratching sheds where you are going to keep fowls in the summer time, instead of the same roosting room that you use in the winter time. All modern poultry houses today are really constructed on the scratching shed plan. In my other houses, where I have no scratching shed attached, I can get just as many eggs, but I cannot bring my stock into the spring in anywhere as near good breeding condition. Build scratching sheds, allowing about two square feet roosting room and about four square feet scratching room for each individual fowl, so you see you have six feet for each fowl. For every twenty fowls we have a window, nine by twelve, twelve lights, and have the windows down close to the floor, facing south.

Question—How many would you put into a house together?

Mr. Matteson—To produce the best possible results, not over fifteen. I put in about thirty-five to forty. My house is built after that plan, but I believe if you were after the best possible results, they should be divided into small ranges.

Question—Would you lath and plaster?

Mr. Matteson—Yes, you have got so much better control of the little red
mite by lathing and plastering, that is the roosting room. You should have each nesting box by itself and loose, so you can take it out and thoroughly clean it, brush it all out with a brush and brush off your roosting perches also. Have a dropping board underneath the perches and immediately remove these droppings, using a deodorizer under the perches, so as to leave the house as clean as possible.

Question—How do you whitewash your poultry houses?

Mr. Matteson—We use a brush; probably a spray would be all right, but we use a large, wide brush. We do not use our laying houses in the summer time but very little, because our fowls are all sold off, so we have time in the summer to get ready for the coming winter. I should say whitewash twice a year if you are going to use that house winter and summer.

Question—Do you sell off your laying hens every year?

Mr. Matteson—Yes, sir. The greatest profit is not in a fowl after she has passed the year-old mark. You never can expect to get the same profit the second year as the first year, although she may lay you as many eggs the second year or the third year, you have got to take a small price, because you are going to get the majority of your eggs along towards spring, or the latter part of the winter, and your profits are going to be cut in two.

Question—Must a hen house be entirely frost-proof during the winter, inside?

Mr. Matteson—No, sir, I don’t think so. The little Leghorns have not the body to stand the cold that the larger American fowls or the Asiatics have. When I had those I had artificial heat, but I am not breeding Leghorns today, I have nothing but the Barred Plymouth Rocks, and the roosting houses are not frost-proof; when it gets below zero they are pretty sure to freeze, but it is never cold enough to stop the egg flow.

Question—Can’t you build hen houses so they are too warm?

Mr. Matteson—No, I don’t think so, unless you use artificial heat.

Question—Do you make a speciality of broilers?

Mr. Matteson—I have made more money out of broilers than any other part of poultry farming, but it is a business you have to have large experience in. There are ten dollars to one in the broiler business when you have once become master of the business, but it takes a whole lot of experience to become a master.

Question—What market is the best for broilers?

Mr. Matteson—You need never worry about the demand for broilers; there is always a demand for all you can produce.

Question—At what age?

Mr. Matteson—It does not depend on the age, it is the size, from a pound and a quarter to a pound and a half for the Milwaukee market, live weight, and Chicago wants a two-pound broiler. Milwaukee will pay you no premium on a broiler over a pound and a half.

Question—Do you sell to commission houses?

Mr. Matteson—No, sir, I don’t. What broilers I have shipped to Chicago I have always been obliged to ship to commission houses, but I drive right in to Milwaukee and sell to dressers. I only live nineteen miles from Milwaukee.

Question—In this locality you would have to depend on commission men.

Mr. Matteson—No, not necessarily; there are always good dressers. There is C. A. Higgins, 148 Madison St., a good reliable man, a dresser, and J. M. Grasher, 70 Juneau Ave., is also a good, reliable man, both of Milwaukee, and they will always pay more than any commission man will pay you.