

The experiments were commenced in the summer of 1906 and were reported upon in the Annual Report of the College. The experiments of 1906 indicated that a hen was a better hatcher than an incubator, and that so far as we had learned, she differed from incubators in having less evaporation of the egg content, and in having a much higher amount of carbonic acid gas in the air immediately surrounding the eggs. Last year we kept no detailed record of the mortality of the chicks. The July and August chickens lived and grew fairly well. This may have been due to the fact that the machines of 1906 were washed with a solution of zenoleum, mainly for the reason that they then looked cleaner and had less of the incubator odor. We thought the good results obtained were due to the fresher air of the incubator room, but as the same room and many of the same machines were used this year, we cannot maintain the idea as being correct.

We have this season tried to make the conditions in the machines more like those found under the hen. It will be noticed in the tables that we have operated nearly all the makes of incubators, at times, different to the manufacturers' directions; hence, one should not judge a machine by these results.

EGGS USED FOR HATCHING.

It is a well known fact that eggs vary in their power of hatching. Some eggs are infertile; some are fertilized, but the germ is so weak that it dies early in the period of incubation; others reach practically the hatching stage and then die. The power of hatching is influenced by breeding, feeding, housing, etc. Where one proposes to follow the vitality of chicks or even to consider any phase of the incubation or rearing problems, it becomes necessary to have eggs as nearly alike as possible; hence, we have used in nearly all the experiments, eggs laid by the same individual hens. We have been trap-nesting over 500 hens and have used such eggs in this work. We have also used shuffled eggs which were purchased from outside sources. By shuffled eggs is meant, simply, a common box or basket of eggs such as would be gathered from an ordinary flock.

The tables which follow give the results obtained from the individual eggs, with the exception of the mortality column, which gives the mortality of the chicks from all sources. The results obtained from the shuffled eggs are omitted for the reason that we failed to get anywhere near an equal division of the eggs as to fertility, etc. We regret that the results should be so. We tried many methods of mixing and separating the eggs with the results as above mentioned. The mortality of the chicks from both kinds of eggs was very nearly the same; therefore, there was no necessity of separating the deaths from each kind of eggs.

If the method of incubating has no effect upon vitality, and the same hen's eggs are in each machine, then the chicks should live in nearly the same proportions, provided that the brooding, feeding, and care are the

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