

## Ontario Department of Agriculture.

## ONTARIO AGRICULTURAL COLLEGE

## Experiments in Hatching and Rearing Chickens.

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For a number of years the Poultry department has been endeavoring to locate the cause or causes for the large losses of young chickens, particularly of those hatched artificially. Numerous visits have been made to farms where chicks were being grown both naturally and artificially. The most casual observer would have noticed that, upon the average, the chickens hatched naturally were more thrifty and vigorous. I have often seen, however, some choice chicks that were hatched by the artificial means, and also a few chicks hatched by hens that were far from first-class. In a general way, nearly all large poultry farms that I have visited, where 1,000, or even say 500, chickens are hatched annually, there was a very heavy death rate, so heavy as to render the business unprofitable. The death rate among chicks hatched artificially, when there is not more than one hundred hatched, is proportionately not so heavy, so far as I can judge from correspondence and observation; yet even among these growers, numerous complaints are made, and the average mortality is very serious. The questions to my mind are as follows:

(a) Is artificial incubation to blame? If so, wherein does it differ from natural incubation?

(b) Is the heavy mortality due to inferior breeding stock?

(c) Are the methods of feeding and brooding the causes of the trouble?

All the questions have to be considered seriously, and it is very difficult to separate them so as to be positive that one and only one is influencing the results. Therefore the writer would ask the reader to carefully consider the methods of selecting eggs for incubation, as well as the methods of feeding and brooding the chickens, before drawing conclusions as to incubation. Many of these experiments, if not all, will have to be duplicated for a number of years.

In taking up the question of how a hen hatches eggs, we at once felt the necessity of a careful study in every detail, and to do this we asked the co-operation of the departments of Physics and Chemistry. The work done by these departments is given in this Bulletin. What may be termed the practical work, or that which may be done by any poultryman who will take the trouble, was done by the Poultry department.