

identical. I am willing to leave this question an open one. Major Croad, in his book "The Langshan Controversy," has ventilated this contention thoroughly and conclusively.

My experience in breeding these birds last season bears out all that Major Croad says in favor of them. The young chick resembles Plymouth Rock chicks for a short time, when it parts with its down and soon dons its sable plumage. My stock is composed of Major Croad's, Samuel's, and Burnham's strains. This winter, we all know, has been a hard one on the fowls, yet not a day has passed the whole winter without the Langshans contributing a few eggs.

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### Artificial Incubation.

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(Continued.)

"But I must not let the reader be ignorant that there are methods to rear motherless chickens as fast as those that have mothers, and that even without losing so many of them as we lose of those who are under the tuition of hens. It is not time as yet to explain the methods by which I have done this with success, but the reader will be convinced how easily the life of the chick may be preserved, and their growth procured.

"The degree of heat that has the requisite activity to cause chickens to be hatched is very nearly that of the skin of the hen, and what is remarkable, this is much the same with that of the skin of all the known species of domestic fowls, and probably of all other kinds of birds in general. It is further to be observed that this degree of heat is also very near the same with that of the skin of quadrupeds, and even that of the human species, so that Livia must have succeeded, as she really did according to Pliny, in hatching a chicken in her bosom, provided only that she had patience enough to keep an egg there during as many days as it must have remained under the hen. A lady whose name I heard from a gentleman, found occasion for only half the patience of Livia to hatch four goldfinches out of five eggs which she had out of the nest; she was obliged to keep them warm only for ten days. Another lady has told me a like fact which, though much more extraordinary, yet has nothing incredible in it; she assured me that she had seen a dog that had sat on eggs quite to the time of the hatching of the chickens; the creature had taken an affection for the eggs which she delighted to have under her belly for some reason

not easily assigned, but which, to be sure, was no desire for hatching chickens. It is not only indifferent to the unfolding of the germ inclosed in the egg of what kind or class the animal that communicates to it a heat of nearly thirty-two degrees is, it is even indifferent to it whether it receives this heat from an animate or inanimate being, from a burning or a fermenting matter; its unfolding and increase will always be procured with equal success by the proper degree of heat, let the cause that produces it be what it will, provided that cause has no other influence upon the egg than that of bare heat, for we shall in the sequel of this work have occasion to observe that casualties very hurtful to the germ may occasionally attend the degree of heat which is in its nature ever so proper for the purpose. The ancient Egyptians reasoned, therefore, upon a very good natural principal when they determined that they might substitute the heat of common fire, properly regulated to that of the hen, in order to warm and hatch chickens.

"But why, some will ask, should we seek after heats that are in some degree artificial, to produce what nature does for us without putting us to any expense, care or trouble whatever? Why should we not content ourselves with letting the hens perform their usual operations? It is because here, as well as in a great many other cases, nature is not so liberal to us as we could wish, she requires to be helped and sometimes summoned and compelled to make us her presents. We should be very badly provided with wines, fruits, and vegetables if we were contented with those that are produced without art or culture. Birds, and chiefly the domestic kinds, are one of the principal stock of food to us, a stock of which it is of great importance to increase and multiply. It is not, however, for the sound and delicate flesh which hens afford us that we are most indebted to them, we are infinitely more beholden to the fowl-kind for the eggs they so lavishly bestow upon us. We shall be startled with the immense consumption made of them in Roman Catholic countries if we reflect on the number of days in every year in which they become almost a necessary food to people, and on the vast quantity of them made use of in other places and on other days when one is not absolutely bound to have recourse to them. By multiplying the chickens or the hens we shall multiply the number of eggs.

"Father Sicard tells us that the Beornian is not obliged to return to the person who trusted him with the management of the mamal, more chicks than what are equal to two-thirds of the number of eggs he had received; so that for the five and forty thousand eggs he is obliged to return no more than thirty thousand chickens; nor is he generally a looser by such a bargain, it is rather a benefit to