

miasmatic poisons do not usually produce their effect upon the system at once, but require some time, longer or shorter as the case may be, to develop disease.

There may be cases where the poison of the miasma is so malignant as to produce almost instantaneous disease upon exposure; but this is not the rule as regards the action of miasmas in temperate climates. They require some time, their characteristic effects and a period varying from a few days to several weeks, or even months, may elapse between the time of exposure and the appearance of disease.

On the other hand, a miasmatic poison (or virus) may accumulate in the system without producing any perceptible effect, and then suddenly manifest itself as if by an explosion, and life may be destroyed before reaction can take place.

Dr. Dickie sums it up thus in brief:

I. Epidemic diseases are produced from causes having their sources in *extrinsic* morbid substances.

II. These morbid substances are of the nature of viruses or miasmas (1).

III. Viruses consist of appreciable substances, and are propagated by contagion; while miasmatic poisons are impalpable, or inappreciable, and do not give rise to communicable diseases.

IV. Miasmatic poisons find their way into the system through the lungs, by means of the respiratory tract; and being introduced into the blood, they produce morbid changes in that fluid, and thus cause disease.

V. Every distinct epidemic disease depends upon some special miasmatic poison as its cause.

VI. These miasmas do not always produce their characteristic effects immediately; they may (and do) act with cumulative force, and destroy life as if by a shock.

Let us apply these points to the present subject.

I. Poultry cholera is obviously an epidemic disease.

II. The special character of the disease is well established: it therefore depends upon a specific cause.

III. The disease is not communicable from one fowl to another, hence it is of *miasmatic* origin.

IV. The primary effect of the poison is to produce morbid changes in the blood—*zymotic* effects—and secondarily to affect local organs. The disease is essentially a constitutional, and not a local one.

V. The poison may accumulate in the blood for a considerable period without producing any appreciable effect, and, after a time, suddenly manifests itself by the death of large numbers in rapid succession.

VI. While the miasm that affects poultry cannot be defined or described we believe it to be generated or formed on premises where the disease prevails: it is of *local* origin.

VII. The cause of Poultry Cholera is therefore first a *miasm*, and secondly, a *special miasm*. The disease is produced by, or is the result of, blood-poisoning, by the process of zymosis, or fermentation.

The subject is one that is not thoroughly understood by poultry breeders, and we recommend them to study up the matter for themselves. The more they look into the subject, the better prepared they will be to fight it.

### Pedigree Breeding.

On the last occasion of our referring to this subject, having shown the necessity, or at least great importance, of two or more pens or yards at commencing a new strain of poultry, or other race of animals in which fancy points are the chief object sought, we proposed to treat of the practical details of founding a new strain of Dark Brahmas, taking them simply as an example—we felt safe in dealing with, whereas with

(1) *Real* plural, *miasmata*. A. R. J. F.

others, while the same principles would hold good, we might not be so correct in the details. We would provide, then, for breeding pullets, at least two yards, stocking them with hens perfectly pencilled up to the throat. If we could only afford a couple of such birds, we would rather have them than a dozen even only a little worse in this quality, since every shade now saves much trouble afterwards; and we would prefer to make two pens with even one such good hen in each, to using more, if not really good also in the same point. Unless such was the case, we would make up the pen to a judicious number with some other breed whose eggs could be readily distinguished by the colour, and not by other inferior hens of the same breed. We wish especially to show the folly of this far too common plan, which stands in the way of success with scores of amateurs. Supposing the cock to be a well-bred bird, it is very likely he may "throw" (a word that just expresses such "happy-go-lucky" results) some well-marked pullets from these poor birds; and many people think this is a gain. To a certain extent, and in a certain sense, it is; but, from a breeder's point of view, it is a serious loss of time and ground gained, and "puts back" the strain; since if these birds in turn are bred, they "throw" back to the poor parent. Far better it is to have, say Dorking hens, which lay white eggs, and thus to ensure not an egg being set except from the one or more well-pencilled hens. One exception may be made, when an amateur has such leisure, or such a treasure of a "man," that he can certainly tell the parentage of every chick. In that case he may add to his hens some inferior ones for the chance of good progeny; but however good this progeny may be, it should only be sold or exhibited, not bred from if it can be avoided.

Of course the two or more cocks will also be selected with all practicable care, and especially in relation to the points necessary for breeding pullets (supposed here to be chiefly desired) which we need not here refer to. If they have besides these the main points of an exhibition cock, all the better; but this is greatly a question of cost. And from such pens, breeding *only* from well-pencilled hens, there will be the very first season some equally well-pencilled pullets. How many it is impossible to tell. If the hens used were bred from poor parentage, they will not be many, as just explained; if they were carefully and well bred, it may be a good many; but we never knew a hen good in this point which did not breed some birds as well marked as herself, unless wretchedly mated. If the proportion is good, it shows that the cock too is of good breeding quality, and has "hit" well with the strain of the hens, in which case he should be kept, unless too old. And so the first season's breeding comes to an end.

From the produce, in due time, a few birds should be selected, still choosing the best-pencilled, and in case of doubt or difficulty, choosing of two birds the best marked on the breast. Next to this, choose for combs, and so far as can be done, also form, size, and leg-feather, but discarding leg-feather without scruple unless combined with the marking required. If the eggs have been set as advised, it will not be needful to choose very bad birds even in these points; but if even one or two birds appear perfectly marked, and good in other points also, let them be treasured, and not parted with it at any price. At this stage the owner can not afford to sell such. Having selected the pullets, there are various ways of mating them. They may be put with—(1) Their own father, and if he has proved of sterling quality, and suits them fairly in other respects, this can be done. (2) The cock from the other pen, and if he has bred really well, this is a very good plan. or (3) a cockerel from the other pen, or one of them. If there are enough, all these plans should be adopted, and thus four pens mated up for next year, which