

of judges frequently visit the different poultry keepers unannounced. In order to get the best prizes, it is necessary that the account must show a good profit by common economical mode of husbandry. The poultry yards, houses, etc., must be in a good and clean condition and made practical, trapnests must be in vogue, and all the chickens from the best hens toemarked. Places where one breed is kept are preferred. The first prizes are at 30 Doll each.

The poultry societies as well as the Danish farmers' co-operative egg export association publish a report every year and the first named also have from the breeding centres with illustrations of the best layers, different kinds of trapnests, etc.

Undoubtedly the breeding centres and the best remunerative poultry yard will serve as good examples to be emulated by others, and at the same time they are the best places for dispersing eggs for hatching and good breeding fowls of great economical value.

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CHANGES OF RATION AND

CHANGES OF FORM

If one reflects that a certain definite food diet is for an animal not simply the expression of taste, of a desire, or a psychological character, but that it is on the contrary, in direct connection with all organic functions, of which the most prominent are related to the digestive organs, to the liver, to the kidneys, the dermic and epidermic excretions, it seems that it is as difficult to change their diet as their organic nature or their specific form.

This thought, moreover, is the very expression of truth, for the change of diet leads at once to the change of form and the first act is possible only to an extent where the other can follow it.

Among the experiments already made on this subject, it is surprising at once to note the great difference that exists in this regard between the mammals and the birds, especially when the animals are changed from a granivorous, vegetarian or even mixed diet to a more tonic one, such as an exclusive carnivorous diet.

Doubtless, Pfluger, when demonstrating the excellence of an albuminous ration succeeded by making dogs live for some time submitted to violent muscular exercise when feeding them exclusively on meat. I believe that the violent exercise, assuring the best organic combustions and a more abundant production of urea, was a condition very favorable to the success of an experiment which usually does not prove successful.

To my knowledge it has been a failure

several times. G. Weise (1) has tried to feed mice on horse meat; those which he raised on grain lived very well, those fed on horse meat died in two or three months. Ed. Defourt (2) in giving to dogs as sole nourishment, horse meat, has found that the animals lost their hair, became covered with eczema, wasted away and died in several weeks. In 1901 and 1902 I myself was disappointed in several similar tests with mice. I could not make them live more than five or six months and the superior result over preceeding ones I believe was due solely to the fact that I gave my animals fresh meat from the butcher shop and not horsemeat.

With birds, on the contrary, the experiments could always be made for a longer time. To speak only of those of which the time is known to me, I beg to point out the experiments of Brandes (2) who fed a pigeon for seven months on meat; of Y'delage, who placed a hen on the same diet for three years; of Weise (2) who fed ducks for four months and a half on horse meat; of Magnan who raised ducks for a year at my laboratory, some on vegetable mash, others on meat, still others on fish and some on insect larva. The animals used for this purpose enjoyed good health when submitted to the diet and the maker of the experiment incessantly publishes the curious results of his experience. Finally, I recall my findings on six generations of carnivorous hens (3), in consequence on which the breed became extinct by sterility.

The difference of physiological and also organic plasticity between these two classes or vertebrates seems worthy to retain attention.

I am inclined to lay this difference to two principal reasons, both, besides being connected to the general problem of organic autotoxication. The entire life being mainly made up of assimilation and excretion, this latter function is never totally performed so that the waste matter of all sorts, dissolvable or solid, accumulates in the organism, restraining the exercise of assimilation, stopping the growth and, finally, hastening decrepitude and death. All surplus of this normal intoxication hurries on a bad end. If this is still more hastened in the mammals than in the birds; the fact, I believe, is in bearing with the other that excretion must be better assured with the latter than with the former.

The first reason for this being so, is that the bird is oviparous and the mammals viviparous. The prolongation of life by the formation of an egg is a performance, an act which requires essentially a depuration. If the egg cell fastens well on its protoplasm or its reserves the toxins of the organism in which it originates, so that the observations of Charrib and Gley; also of Phisalix, R. Levy and my own result, on the other hand it realizes a new life with

a proper assimilation and an ejection of waste matter, all the more assured, that the new organism at first much smaller than the old one has a proportionately larger surface.

This renewal of life is all the more restrained as the egg takes away as vitelline reserve a much larger mass of the old organism, and for the birds this is not unimportant. But how much more important with the mammifer are the connections with the parent organism. The viviparous mammifer has, so to speak, nothing to renew, for directly stationed on the maternal uterus, it develops at the expense of this organism; its life is realized through the medium of one which has already long existed and which is already filled with the vital intoxications. After the birth, it is the lacteous food which is furnished to the new being, made up of products elaborated by a mother whose life goes on.

The curves (?) of growth of these different animals, moreover, corroborate largely this opinion. The curves which I have established on several generations of hens, compared with those which Cligny (1) has indicated for the plaice, with those which since Bournure has found on a beetle, with those of Sedgwick-Minot, have led me to consider as taking generally the following form: These curves (?) are always made of two separate curvatures by a point of inflection; the first curve is a superior concavity. I have been led to conclude that the point of inflection is nearer the origin in comparison with the organism, is on the way of greater intoxication, and this conclusion seems confirmed by the experience of Magnan.

Now, with the original mammals the point of inflection is still visible after the birth, but is very near the origin. With the Guinea-pig it is to be found about the 10th day of life, according to Sedgwick-Minot (3); it is very early still with the mouse (Stefanowska) (4). With men (5) it is found before the birth at the 7th month of the uterine life and the posterior curve at the birth is entirely an inferior concavity.

According to the ideas expressed above, these facts seem to indicate for the mammifer an organic intoxication, more extensive and much earlier.

Another class of data comes to the aid of this opinion. It is well known that the longevity of the birds is incomparably much greater than that of the mammifers and their old age, besides is freer from defects and weakness. Metchnikoff has already called attention to the strong difference which exists between the rapid decrepitude of the old mammifers and the active old age of a much older bird.

A standard fact would seem, however, to the disadvantage of the birds. Their principal excretion that of the kidney takes place in uric acid and not in urea, as with the mammifer. But with the mammifer

the development of the uric acid to the detriment of the urea is, as is known, a bad condition of life; but, perhaps, the conclusion is only good for the (Inside?) of the class and that it is daring, not to say false (wrong?) to extend it to the birds.

Besides, the birds being large producers of feathers, seem to eliminate at the periphery in a much more abundant manner than the mammifers do it by the production of hair. That these substances are excretions is beyond doubt. J. de Riboisiere (1) has commenced the demonstration of it by showing how the abundance of feathers varies with the food diet, like the quantity of liver among the animals of the same diet and even among the specimens of a same kind.

The keratine (?) of the plumage, a nitrogenized substance, provides for the elimination of the nitrogenized waste and is abundant especially with the carnivorous and insectivorous class. The Chitine (?) on the other hand, a similar substance to the cellulose, is equally excretive, but like Bournure (1) has shown with the beetle, it is more abundant with the herbivorous animal than with the carnivorous.

All these phenomenon which have evident connections, are of the greatest interest to the Biology in general and for the more profound comprehension of the animal forms. Their knowledge and their study could only be useful to the rural economics since the latter must tend to increase all the products such as eggs, feathers, meat, without injury to the good health of the animals.

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POULTRY FIELD DAYS IN EASTERN STATES.

Some of the Agricultural Colleges and Poultry Associations in Eastern States have inaugurated Poultry Field Days to be held during the summer, and among those already announced are:

The Third Annual Poultry Convention which will be held at the Massachusetts Agricultural College at Amherst, Massachusetts, from July 21st to July 23rd, inclusive, 1915.

The Annual Poultry Field Day at Storrs, Connecticut, which will be held at Storrs, from August 5th to 7th, inclusive, 1915.

The Agricultural Field Day at New Brunswick, New Jersey, which will be held in New Brunswick, at the College Farm, from September 9th to 11th, inclusive. September 9th is set aside as a special Poultry Day.

The programs of these meets include many noted poultry speakers from the west as well as from the east, and they will touch upon all subjects that are of vital interest to poultry farmers.