

Messrs. Meyer, Willitts, W. Fox, McNeil, Rice, Oke, Bartlett, Essex, R. Fox, Lake, Mann, Anderson and several others. Mr. F. K. Webber, the manager of the poultry plant acted as guide. An enjoyable time was spent and a vote of thanks tendered Mr. Massey for his kindness. Cheers for Mr. Massey and Mr. Webber were the finale. The buildings and stock we hope to review after a personal visit, which a prior engagement prevented us from enjoying on this occasion.



ANIMAL MATTER A NECESSITY FOR POULTRY.

U. S. EXPERIMENT STATION WORK.

It is well known that poultry when allowed to range at will eat considerable quantities of animal matter in the form of insects, worms, etc.

How necessary this animal matter is to the health of fowls, and especially ducks, was strikingly brought out by the recent experiments at the New York State Experiment Station. Two lots each of chickens and ducks, as nearly alike as possible, were used in these experiments. One lot in each case was fed a ration of mixed grains and skim milk or curd containing no animal matter, the other a ration of mixed grains, with animal meal and fresh bones or dried blood. The two rations were about equally well balanced, although the "animal-matter" ration contained a little less protein than the "vegetable-matter" ration. The distinctive difference between the two rations was that in the one case

two-fifths to one-half of the protein came from animal sources, while in the other it all came from vegetable sources.

Two trials were made with chickens.

In each trial more food was eaten by the lot receiving animal protein, the gain in weight was more rapid, maturity was reached earlier, less food was required for each pound of gain, and the cost of gain was less.

During the first twelve weeks of the first trial (starting with chickens one-half week old) the chicks on animal meal gained 56 per cent. more than those on the vegetable diet, although they ate only 36 per cent. more; they required half a pound less of dry matter to gain 1 pound, and each pound of gain cost only 4¼ cents, as compared with 5½ cents for the grain-fed birds.

During the next eight weeks the cost of gain was 7½ cents and 11½ cents, respectively. The animal-meal chicks reached 2 pounds in weight more than five weeks before the others; they reached 3 pounds more than eight weeks sooner, and three pullets of the lot began laying four weeks earlier than any among the grain-fed birds.

With the second lot of chicks, starting at six weeks of age, the differences were in the same direction, though not quite so striking, thus showing that the great advantage of the animal nitrogen is in promoting quick, healthy growth and early maturity rather than increasing the tendency to fatten. . . .

The results were most convincing, almost startling, in the case of ducklings fed the contrasted rations. . . . Before the experi-

ment had been long under way it was noticed that the animal-meal birds were developing rapidly and evenly, but the grain-fed ducklings were becoming thin and uneven in size. It was sometimes almost pitiful to see the long-necked, scrawny, grain-fed birds, with troughs full of good, apparently wholesome food before them, standing on the alert and scrambling in hot haste after the unlucky grasshopper or fly which ventured into their pen, while the contented-looking meat-fed ducks lay lazily in the sun and paid no attention to buzzing bee or crawling beetle. The 32 meat-fed birds lived and thrived, but the vegetable-food birds dropped off one by one, starved to death through lack of animal food, so that only 20 of the 33 were alive at the close of the fifteenth week of contrasted feeding. They were then fed for four weeks on the meat-meal ration, and made nearly as rapid gains as the other lot at the same size two months before, but they never quite overcame the disadvantage of their bad start on grains alone. . . .

In conclusion, then, it may be said that rations in which from 40 to 50 per cent. of the protein was supplied by animal food gave more economical results than rations drawing most of their protein from vegetable sources. The chief advantage was in the production of rapid growth, although the cost of production is also in its favor. While inferior palatability may have had something to do with the marked results, especially with the ducks, the whole bearing of these experiments and others not yet reported seems to indicate that the superiority of the one ration is due to the presence in it of animal food.