

LIXIR OF LIFE FOUND

METCHNIKOFF'S DISCOVERY
THE PASTEUR INSTITUTE.

Every class of domestic animals have been subjected to scientific study in order to find or establish a balanced ration, which will furnish the necessary food elements in the proper combinations, and at a reasonable price.

In this particular work the Agricultural Experiment Stations have conducted many important experiments, but very few of them have been in the poultry line, and a person seeking information on this question must therefore except the results of individual experiments or abide by theories promulgated by individuals.

These may be and doubtless are in most cases as reliable as the Station work, but the fact that very few people outside of the educational and experimental institutions are qualified to make the correct tests, analyses, etc., renders it hard to obtain the results of any carefully conducted experiments.

Of course, the same general rules should be used in the preparation of foods for poultry, as for other animals, giving due consideration to the differences in the powers of digestion and assimilation, as well as in the chemical composition of the product, and likewise of the foods. Having narrowed the experiment to apply only to poultry we shall see other important points claiming attention, such as the structure of different breeds, their habits, etc., and the theory will be proven, what has already become an established fact, that the sprightly, active Leghorn requires different feed than does the massive, docile Brahma.

The general principles of feeding have been outlined by Professor Cushman as follows:

Certain food elements are required to sustain life and renew the various parts. If more food is given than is required for this it is stored up in the body for future use or used in reproduction. The product of poultry is simply the surplus food that has been well digested and assimilated. The more food the fowl can assimilate the greater the product, if the right materials are given. Food is made up of carbonaceous, nitrogenous, and mineral matter, besides the water it contains. Starved, fat, and sugar are carbonaceous foods. Lean meat, white of an egg, the yolk of milk, and the gluten of grains are classified among the nitrogenous.

The mineral matter is found in the whey of milk, in bones, in all who-grains and usually in combinations with nitrogenous foods. The digested carbonaceous material, after passing into the blood of an animal, is used to produce heat and force; it is oxygenized or gradually burned and sustains activity and energy. If there is a surplus it is stored up as fat and is drawn upon when needed, when the supply in the blood is deficient. The nitrogenous material goes to replace worn out tissue, muscle, etc., while the mineral matter furnishes the materials for the bones and to replace nerve waste, etc. Fat and mineral are also present in muscle to a certain extent. Bone and the tissues of the body contain all of these elements to a certain extent, but such predominance in the parts mentioned.

The carbonaceous material is to the animal much like what coal is to the locomotive. The nitrogenous matter might be compared to the steel and iron of which the locomotive is made, and the nervous system of the animal to the engineer who drives or stops the engine and controls it. It takes some coal

Agricultural

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to get up steam and keep it up if the locomotive does not move. It takes much more to move a heavy train. The wear and breakage due to high speed requires more extensive and frequent repairs of the locomotive machinery. If the engine gets drunk or falls asleep, or sustained something serious happens. If you pile coal into the engine's boilers and it stands on the track, there will be a blow off of steam without any work being done.

This will continue as long as the coal and water supply holds out. The engine's reserved supply of carbon is in its tender. That of the animal is its fat. If we feed an animal too much carbonaceous material it can store it up for a time and get it out of the way, but its muscles and nervous system are not properly fed and become weak. As the muscles are not properly repaired their place is taken by the surplus fat. The animal then gains in weight, but loses in nerve, muscular strength, and vigor.

If we feed an excess of nitrogenous and mineral matter and not enough carbonaceous food, the animal becomes less active and restless. Its muscles become harder and larger. The stores of fat in the body, like the coal in the locomotive tender, are used up to furnish heat while the nitrogenous food is stored as lean meat. If we go too far in this direction, so authorities tell us, the blood becomes overloaded with nitrogenous matter and the liver and kidneys are overtaxed in removing it, the system becomes clogged and this is worse for it than too much fat. The animal may lose its power of digestion and waste away with fever or die of bowel trouble or nervous derangement. We are also taught by the authorities that there must be enough mineral matter or phosphates in the food. If enough of the other elements are fed but mineral phosphates are lacking, the nervous forces are starved, the blood becomes impoverished, and the food is not digested or properly distributed.

An animal can take care of an excess of any one of these elements carbon, etc., without injury, but given continuously, they may receive more than can be stored up or excreted. If we feed heavily and the proportion are not right, the animal will have to eat too much of the elements in excess to get what it must have of what is lacking. The heavier we feed the more important it is that we give the proper proportions. If we do this we have what is called a balanced ration. The more perfect the balance the animal can eat and digest with benefit, the greater the product.

Experimenters find that a comparatively small amount of mineral matter is necessary in the food, and that there should be several times more carbonaceous than nitrogenous matter, and that inactive less nitrogenous matter is required. The greater the muscular action the greater the amount that is needed. The colder the temperature the more carbonaceous material the inactive animal needs.

When passive, simply eating and keeping warm in a cold barn an ox will use up twelve times as much heat producer as tissue and muscle repairer. If he works he needs more muscle repairer and less heat producer, because the muscle that is destroyed by work is oxygenized and also produces some heat and force. It is not so good a fuel, but it contributes something. A growing animal wants more muscle and tissue building material in proportion than a mature animal will that is equally active.

NOT HER FAULT.

Is this the cracked wheat Jane? I dun know, mom; I ain't looked at it or teched it, an' if it's cracked, wuz cracked afore I come here.

TO CURE A COLD IN ONE DAY.

Take Laxative Bronto Quinine Tablets. All druggists refund the money if it fails to cure.

E. & W. Grove's signature is on each box.

DE MORTUIS.

Bizzibuddy—What do you mean by such a remark?

Berriman—What remark?

Bizzibuddy—Didn't I understand you to say you'd like to lay out my friend Jones?

Berriman—That's my business, girl.

Bizzibuddy—it is, eh? Aren't you ashamed of yourself? Don't you know the man's dead?

Berriman—Certainly. I'm an undertaker.

CALLER—BRIDGET MAGUIRE HAS REFERRED ME TO YOU FOR HER CHARACTER, MADM.

Housekeeper—Well, she's a very good girl.

Caller—I suppose you found her.

Housekeeper—Well, she could hardly be both. You see, I frequently had occasion to tell her to say I wasn't at home.

TRUTH AND OBEDIENCE.

Caller—Bridget Maguire has referred me to you for her character, madam.

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Housekeeper—Well, she could hardly be both. You see, I frequently had occasion to tell her to say I wasn't at home.

NATURE IS ALWAYS FIGHTING AGAINST DISEASE.

The right kind of medicine is the kind that helps Nature by toning up the system and enabling it to resist disease. Such a tonic is only found in Dr. Williams' Pink Pills for Pale People. By building up the blood and strengthening the nerves these pills reach the root of disease, restore health, and make people bright, active and strong.

Mrs. R. Doxsee, Gravenhurst, Ont., writes: "I believe that Dr. Williams' Pink Pills saved my life. When I began their use was so weak that I was scarcely able to be out of my bed, and showed every symptom of going into a decline. I was pale, emaciated, suffered from headaches and nerve exhaustion. I used Dr. Williams' Pink Pills for a couple of months, and they have completely restored me."

Sold by all dealers or post paid at 50 cents a box or six boxes for \$2.50, by addressing the Dr. Williams' Medicine Co., Brockville.

Winter is a trying time for most people—especially so for delicate ones. Colds, la grippe and pneumonia find them easy victims.

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