

poultry people it is a condition very frequently passed over, and when otherwise not very clearly understood; therefore I wish to make this article as plain as possible. It is necessary for the maintenance of health and strength that the food should not only be good and suitable, but properly assimilated after being partaken of—*i.e.*, converted into nutrition—and it will be easily seen that anything affecting the nutritive process must be injurious to the functional activity of the digestive and other organs. This is especially the case with anæmic or poor blood, which fluid under such conditions not only deteriorates the power of the gastric and intestinal glands, but weakens the muscular action of the stomach proper, and its important secondary agent, the gizzard. It will be, therefore, understood that anæmia plays a prominent part in the production of indigestion.

If the reader will pause for a moment to consider the important part in the maintenance of life the red corpuscles of the blood play, remembering they are the agents by which the chemical changes occur in the body, their emission of carbonic acid gas and absorption of oxygen in the lungs, their ceaseless circulatory rounds conveying oxygen to every part of the system, aiding in the removal of effete matter, and constantly building up the body with nutritive elements, he will recognise at once, or should do, the value of their mission, and the importance of maintaining their standard of strength. In anæmia the centre of circulation (the heart) is of necessity weakened, and it is almost needless to say this great force pump requires a full and free supply of *healthy blood* to enable it to maintain its strength and perform its work properly. The power of contraction and dilation which the heart must continually exercise is strengthened or lessened in accordance with the amount of material the organ is supplied with, and to which it owes its machine-like regularity and muscular energy, and the feeble heart-beat of a poor anæmic little chick very soon stops. Anorexia, or loss of appetite, as associated with anæmia is the result of the weakened state of the digestive organs, the tone of which being lost, the sense of hunger becomes blunted, and the bird has consequently little or no inclination to feed.

The causes of anæmia are numerous and not difficult to find. Overcrowding, defective ventilation, stinted light, bad drainage, innutritious and insufficient food, are severally conducive to anæmia, and if the subject be of a weakly constitution they are the more so. Anæmia also follows debilitating disease and hæmorrhage. Cellar-kept poultry or those in other dark habitations, soon become anæmic. Note the bleached and colorless shoots of a plant that has sprouted in a dark cellar and compare them with the shoots of a similar plant exposed to heaven's light and breath, or observe the pallid countenance and languid step of an

individual who is confined in a crowded ill-ventilated workshop throughout the day, as contrasted with one whose occupation gives him every chance of imbibing pure, or at any rate fresh air, and you have a true and daily illustration of the effect of these sanitary arrangements, which may be with equal force applied to poultry under similar conditions. Indeed, fresh air and light are as essential to birds of the gallinaceous tribe, for the formation of good blood, as to man. Air must, to maintain health, *be renewed not re-used*. It is the oxygen which gives color to the blood. Stint the supply of this necessary element and you withdraw the coloring matter and promote the pallid condition characteristic of anæmia. Again, good nutritious food is just as necessary for the production of pure blood and healthy muscle. We may as well try and build a strong substantial house out of bad and weak materials, as expect that blood derived from such a source, and under the circumstances enumerated, will make sound muscle.

**SYMPTOMS.**—Anæmic poultry generally exhibit considerable muscular prostration, with depression of spirits. The bird has a bloodless look, especially about the eyes. The comb is generally pallid, cold and inclined to lop over. The mouth is white, the tongue particularly so. The limbs are cold, and the thighs sometimes swollen. The skin is unnaturally white and clammy. The bird very often squats or walks languidly about, as though life wasn't worth living. A post-mortem examination reveals general pallor of the muscles and viscera. The tissues are flabby and watery looking, the liver bleached, and the lungs of a greyish-white color. Anæmic birds are usually emaciated. The eggs (but few) are thin in shell, and pale in yolk. The excretions and secretions are scanty, the plumage lustreless. Indigestion and loss of appetite have already been alluded to. Anæmic poultry is not nutritious food or readily digested, any more than anæmic veal—*i.e.*, where the calf has been frequently bled to produce white meat after slaughter.

**TREATMENT.**—To insure a successful issue the causes giving rise to anæmia must be promptly removed, and this should be followed by assisting Nature in restoring the deficiency in the color and quality of the blood by those agents which form the necessary constituents of healthy blood. For the former a nutritious diet, with a free allowance of fresh air, sunlight, and ample run should be ordered. Vegetable and mineral tonics, especially the preparations of iron, and, if there be much emaciation, cod liver oil should be prescribed for the latter. The phosphate of iron is extremely serviceable in anæmia, and when the latter is associated with indigestion I find the greatest benefit from steel and pepsine, which I prepare in gelatine capsuled pilules. In advanced cases the inhalation of oxygen may