or hæmatine. Hæmatine contains 6.64 per cent. of iron, in the form, most probably, of the simple element. It is distinguished from all other animal bodies by its blood-red color. This peculiar color does not, however, depend on the iron; for hæmatine may retain its color after all the iron has been extracted from it. Therefore the changes produced in the color of the blood by respiration, to which allusion will be made further on, cannot be ascribed to any changes in the condition of the iron in the hæmatine. They are probably due to the fact that the oxygen, by first contracting the blood cells and thickening their walls, makes them so reflect light as to appear, in mass, bright red; and carbon dioxide, on the contrary, by dilating them and thinning their walls, makes them reflect less light, and appear, in mass, nearly black.

20. Fibrine appears to be developed commensurately with the blood-cells, and in like manner is perfected in the blood. The coagulation or clotting of the blood is due to the organization of its fibrine, and indicates a capacity for developing and acquiring higher organization in conditions favorable to life.

21. Of the inorganic constituents of the blood—the substances which remain as ashes after its complete burning—one may observe in general that they are small in quantity in proportion to the animal matter contained in it. Those among them of peculiar interest are the phosphate and carbonate of soda and the phosphate of lime. In illustration of the characters which the blood may derive from the phosphate of soda, Liebig points out the large capacity which solutions of that salt have of absorbing carbon dioxide, and giving it off again when agitated in atmospheric air and when the atmospheric pressure is diminished.

22. The fatty matters which are found in the tissues or secretions exist, for the most part, ready formed in the blood; for it contains the cholesterine of the bile, the cerebrine and phosphorized fat of the brain, and the margaric and oleic acids of common fat. The quantity of the fatty matters in the blood varies, being commonly increased after each meal in which fat, starch or saccharine substances have been taken.

23. The water of the Blood varies from hour to hour in its quantity, according to the period which has elapsed since the taking of food or