252. An immediately obvious effect of respiration in the red-blooded animals is a change of color; the blood, in passing through the respiratory organs, being changed from a very dark purple to a bright scarlet. In the great circulation (241) the scarlet blood occupies the arteries, and is usually called *red blood*, in contradistinction from the venous blood, which is called *black blood*. In the lesser circulation, on the contrary, the arteries carry the dark, and the veins the red blood.

253. The quantity of oxygen consumed by various animals in a given time has been accurately ascertained by experiment. It has been found, for instance, that a common-sized man consumes, on an average, about 150 cubic feet in twenty-four hours; and as the oxygen constitutes but 21 per cent. of the atmosphere, it follows that he inhales, during a day, about 700 cubic feet of atmospheric air. In birds, the respiration is still more active, while in reptiles and fishes it is much more sluggish.

254. The energy and activity of an animal is, therefore somewhat dependent on the activity of its respiration. Thus the toad, whose movements are very sluggish, respires much more slowly than the mammals, birds, and even insects; and it has been ascertained that a butterfly, notwithstanding its comparatively diminutive size, consumes more oxygen than a toad.

255. The circulation and respiration have a reciprocal influence upon each other. If the heart be powerful, or if on violent exercise a more rapid supply of blood to repair the consequent waste is demanded, (201,) respiration must be proportionally accelerated to supply air to the greater amount of blood sent to the lungs. Hence the panting occasioned by running or other unusual efforts of the muscles. On the other hand, if respiration be hurried, the blood is rendered more stimulating by greater oxygenation, and causes an ac-