

gestive organs, and conveyed by the pulmonary arteries to the place where it is to undergo combustion: the diaphragm is the bellows, which feeds the furnace with air; and the trachea is the chimney, through which the carbonic acid, which is the product of the combustion, escapes.

It becomes an interesting problem to determine whether this analogy may not be farther extended; and whether the combustion of carbon, which takes place in respiration, be not the exclusive source of the increased temperature, which all animals, but more especially those designated as *warm-blooded*, usually maintain above the surrounding medium. The uniform and exact relation which may be observed to take place between the temperature of animals and the energy of the respiratory function, or, rather, the amount of the chemical changes induced by that function, affords very strong evidence in favour of this hypothesis. The coincidence, indeed, is so strong, that notwithstanding the objections that have been raised against the theory founded upon this hypothesis, from some apparent anomalies which occasionally present themselves, we must, I think, admit that it affords the best explanation of the phenomena of any theory yet proposed, and that, therefore, it is probably the true one.

The maintenance of a very elevated temperature appears to require the concurrence of two conditions; namely, first, that the whole of the blood should be subjected to the influence of the air, and, secondly, that that air should be presented to it in a gaseous state. These, then, are the circumstances which establish the great distinction between warm and cold-blooded animals; a distinction which at once stamps the character of their whole constitution. It is the condition of a high temperature in the blood which raises the quadruped and the bird to a rank, in the scale of vitality, so far above that of the reptile: it is this which places an insuperable boundary between mammalia and fishes. However the warm-blooded Cetacea, who spend their lives in the ocean, may be found to approximate in their outward form, and in their external instruments of motion, to the other inhabitants