

HUMAN P H Y S I O L O G Y;

ILLUSTRATED BY ENGRAVINGS.

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"Vastissimi studii primas quasi lineas circumscripsi."—HALLER.

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chemical changes, giving rise to new compounds, so that the caloric, which was previously latent, becomes free. If, for example, two substances, each containing a certain amount of specific heat, unite, so as to form a compound, whose specific heat is less, a portion of caloric must be set free, and this will be indicated by a rise in the temperature. It is this principle, which is chiefly concerned in some of the theories of calorification.

The subject of the equilibrium and conduction of caloric has already been treated of, under the sense of touch, (vol. i. p. 101); where several other topics were discussed, that bear more or less upon the present inquiry. It was there stated, that inorganic bodies speedily attain the same temperature, either by radiation or conduction; so that the different objects in an apartment will exhibit the same degree of heat by the thermometer, but the temperature of animals, being a vital operation, they retain the degree of heat peculiar to them, with but little modification from external temperature. There is a difference, however, in this respect, sufficient to cause the partition of animals into two great divisions—the *warm-blooded* and the *cold-blooded*; the former comprising those whose temperature is high, and but little influenced by that of external objects;—the latter those whose temperature is greatly modified by external influences. The range of the temperature of the warm-blooded—amongst which are all the higher animals—is limited; but of the cold-blooded extensive.^a

The following table exhibits the peculiar temperature of various animals in round numbers;—that of man being 98° or 100°, when taken under the tongue. The temperature in the axilla is something less. In the latter situation, Dr. Edwards^b found it to vary, in twenty adults, from 96° to 99° Fahrenheit, the mean being 97°.5.

ANIMALS.	Observers.	Temperature.
Arctic fox, - - - - -	Capt. Lyon. ^c	107
Arctic wolf, - - - - -	Do.	105
Squirrel, - - - - -	Pallas. ^d	
Hare, - - - - -	Do.	104
Whale, - - - - -	Scoresby. ^e	
<i>Arctomys citillus</i> , zizil,—in summer,	Pallas.	103
Do. when torpid,	Pallas.	80 to 84
Goat, - - - - -	Prévost and Dumas. ^f	103
Bat, in summer, - - - - -	Do.	102
Musk, - - - - -	Do.	
<i>Marmota bobac</i> ,—Bobac, - - - - -	Do.	101 or 102
House mouse, - - - - -	Do.	101
<i>Arctomys marmota</i> , marmot—in summer,	Do.	101 or 102
Do. when torpid, - - - - -	Do.	43

^a Turner's Elements of Chemistry, 5th Amer. Edit., by Prof. F. Bache, from 5th London, p. 5, Philad. 1835.

^b De l'Influence des Agens Physiques, &c., Paris, 1824; and Hodgkin and Fisher's translation, Lond. 1832.

^c Parry's Second Voyage to the Arctic Regions.

^d Nov. Species Quadruped. de Glirium Ordine, Erlang. 1774.

^e An Account of the Arctic Regions, Edinb. 1820.

^f Bibliothèque Univers. xvii. 294.