

INTRODUCTION.

Of Thermotics and Atmology.

I EMPLOY the term *Thermotics*, to include all the doctrines respecting Heat, which have hitherto been established on proper scientific grounds. Our survey of the history of this branch of science must be more rapid and less detailed than it has been in those subjects of which we have hitherto treated: for our knowledge is, in this case, more vague and uncertain than in the others, and has made less progress towards a general and certain theory. Still, the narrative is too important and too instructive to be passed over.

The distinction of Formal Thermotics and Physical Thermotics,—of the discovery of the mere Laws of Phenomena, and the discovery of their causes,—is applicable here, as in other departments of our knowledge. But we cannot exhibit, in any prominent manner, the latter division of the science now before us; since no general theory of heat has yet been propounded, which affords the means of calculating the circumstances of the phenomena of conduction, radiation, expansion, and change of solid, liquid, and gaseous form. Still, on each of these subjects there have been proposed, and extensively assented to, certain general views, each of which explains its appropriate class of phenomena; and, in some cases, these principles have been clothed in precise and mathematical conditions, and thus made bases of calculation.

These principles, thus possessing a generality of a limited kind, connecting several observed laws of phenomena, but yet not connecting all the observed classes of facts which relate to heat, will require our separate attention. They may be described as the Doctrine of Conduction, the Doctrine of Radiation, the Doctrine of Specific Heat, and the Doctrine of Latent Heat; and these, and similar doctrines respecting heat, make up the science which we may call *Thermotics proper*.

But besides these collections of principles which regard heat by itself, the relations of heat and moisture give rise to another extensive and important collection of laws and principles, which I shall treat of in connexion with Thermotics, and shall term *Atmology*, borrowing