
NEW THEORY OF THE TIDES.

HHEAT, or, as called by chemists, caloric, whether a substance or quality, expands whatever it pervades; and this effect is the same, whether caused by the sun's presence, by friction, or otherwise.*

Besides a variety of particular experiments, daily experience demonstrates the expanding force of heat. In proportion to the degree of heat present, the mercury

* Although few things are more generally known, than that heat expands whatever it pervades, the following account of this effect is cited in explanation :

"The principal effect of heat is to augment the volume of all bodies, without adding to their weight. In general, every body in nature is dilated by heat, and all mineral substances, without exception, experience a dilation which is greater the more intense the heat. Philosophers have made an experiment with a cylinder of metal fitted to an orifice in a metallic plate, so as just to pass through it when cold, and they find that the same cylinder, when heated, could not pass. It is therefore established that bodies expand by heat, and that their dimensions are enlarged in all directions." Elements of Chemistry, by M. de Fourcroy, article Heat.