

THE EVOLUTION OF THE WORLD

half of our law of substance, the principle of energy (*vide* p. 230). The second thesis is: "The energy of the universe tends towards a maximum." In my opinion this second assertion is just as erroneous as the first is true. In the theory of Clausius the entire energy of the universe is of two kinds, one of which (heat of the higher degree, mechanical, electrical, chemical energy, etc.) is partly convertible into work, but the other is not; the latter energy, already converted into heat and distributed in the cooler masses, is irrevocably lost as far as any further work is concerned. Clausius calls this unconsumed energy, which is no longer available for mechanical work, *entropy* (that is, force that is directed *inward*); it is continually increasing at the cost of the other half. As, therefore, the mechanical energy of the universe is daily being transformed into heat, and this cannot be reconverted into mechanical force, the sum of heat and energy in the universe must continually tend to be reduced and dissipated. All difference of temperature must ultimately disappear, and the completely latent heat must be equally distributed through one inert mass of motionless matter. All organic life and movement must cease when this maximum of *entropy* has been reached. That would be a real "end of the world."

If this theory of entropy were true, we should have a "beginning" corresponding to this assumed "end" of the world—a minimum of entropy, in which the differences in temperature of the various parts of the cosmos would be at a maximum. Both ideas are quite untenable in the light of our monistic and consistent theory of the eternal cosmogenetic process; both contradict the law of substance. There is neither beginning nor end of the world. The universe is infinite,