

Obviously it is not everywhere in such a universe that life can exist. The visible stars, like the sun, certainly cannot support life. Throughout such bodies durable and complex arrangements of matter are impossible, for if formed, they must be at once dissipated by catastrophes far greater than any which can occur upon the earth's crust. The enormous intensity of heat, even in the most superficial parts of suns, must effectually preclude any state of matter but the gaseous, and thus prevent the existence there of anything of the nature of a mechanism. Such bodies, apart only from continuous variation from center to periphery, in the proportions of the elements, in density, and in the nature of the chemical unions between the elements, must be essentially homogeneous. They can scarcely possess relatively as much structure as the earth's atmosphere. In truth the sun itself seems to be the one and only durable solar mechanism.

Not less evident is the impossibility of active life in interstellar space or in *nebulæ*. Dormant life (*panspermia*) may indeed be possible universally, except only in the neighborhood of suns. But if life is to be fed, if there is to be active metabolism, including exchange of matter with the environment, something more