

matter is not being continually formed out of not-living matter, while it is an undeniable fact that living matter is continually and everywhere passing out of existence, the preservation of life is dependent upon an enormous self-overproduction which, combined with the process of natural selection, secures its permanence and the development of the highest forms of which it is capable. The continuity—*i.e.*, the interdependence—of all living forms in time and space guarantees the non-extinction of this phenomenon, which, for all that we know, is of a unique character. The modern scientific and popular view of life is that it is a unique phenomenon, that it is a ubiquitous phenomenon, at least within the area of what we call “our” world, and that it is a continuous phenomenon. The unique character or singularity of life has been directly demonstrated by the sameness of the ultimate units of all living matter, the cells, indirectly by the refutation of the older theory of spontaneous generation; and has been enormously strengthened by the doctrine of descent, the phenomena of overcrowding, and the possibility of natural selection. The ubiquity of life—within certain limits—has been revealed directly by the microscope, and indirectly by the modern theories of disease, and of many forms of growth.<sup>1</sup> The continuity of

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living forms.

<sup>1</sup> There is a striking passage in Nansen's 'Farthest North,' vol. i. p. 445, showing the ubiquity of organic germs: "When the sun's rays had gained power on the surface of the ice, and melted the snow, so that pools were formed, there were soon to be seen at the bottom of these pools small yellowish brown spots, so small that at first one hardly noticed them. Day

by day they increased in size, and absorbing, like all dark substances, the heat of the sun's rays, they gradually melted the underlying ice and formed round cavities often several inches deep. These brown spots were . . . algæ and diatoms. . . . I actually found bacteria,—even these regions are not free from them."