

away in the almost illimitable depths of past time, and we are ready to despair of ever reaching, by any process of discovery, to its first steps of progress. At what time did life begin? In what form did dead matter first assume or receive those mysterious functions of growth, reproduction and sensation? Only when we picture to ourselves an absolutely lifeless world, destitute of any germ of life or organization, can we realize the magnitude of these questions, and perceive how necessary it is to limit their scope if we would hope for any satisfactory answer.

We may here dismiss altogether that form in which these questions present themselves to the biologist, when he experiments as to the evolution of living forms from dead liquids or solids attacking the unsolved problem of spontaneous generation. Nor need we enter on the vast field of discussion as to modern animals and plants opened up by Darwin and others. I shall confine myself altogether to that historical or palæontological aspect in which life presents itself when we study the fossil remains entombed in the sediments of the earth's crust, and which will enable me at least to show why some students of fossils hesitate to give in their adhesion to any of the current notions as to the origin of species. It will also be desirable to avoid, as far as possible, the use of the term "evolution," as this has recently been employed in so many senses, whether of development or causation, as to have become nearly useless for any scientific purpose; and that when I speak of creation of species, the term is to be understood not in the arbitrary sense forced on it by some modern writers, but as indicating the continuous introduction of new forms of life under definite laws, but by a power not emanating from within themselves, nor from the inanimate nature surrounding them.¹

¹ The terms Derivation, Development and Causation have clear and definite meanings, and it is preferable, wherever possible, to use one or other of these.