

isolated, and it is only by the result of a multiplicity of observations, combined by reason, that we are able to trace the mutual relations existing between them. If, however, in the present age, which is so strongly characterized by a brilliant course of scientific discoveries, we perceive a want of connection in the phenomena of certain sciences, we may anticipate the revelation of new facts, whose importance will probably be commensurate with the attention directed to these branches of study. Expectations of this nature may be entertained with regard to meteorology, several parts of optics, and to radiating heat, and electro-magnetism, since the admirable discoveries of Melloni and Faraday. A fertile field is here opened to discovery, although the voltaic pile has already taught us the intimate connection existing between electric, magnetic, and chemical phenomena. Who will venture to affirm that we have any precise knowledge, in the present day, of that part of the atmosphere which is not oxygen, or that thousands of gaseous substances affecting our organs may not be mixed with the nitrogen, or, finally, that we have even discovered the whole number of the forces which pervade the universe?

It is not the purpose of this essay on the physical history of the world to reduce all sensible phenomena to a small number of abstract principles, based on reason only. The physical history of the universe, whose exposition I attempt to develop, does not pretend to rise to the perilous abstractions of a purely rational science of nature, and is simply a *physical geography, combined with a description of the regions of space and the bodies occupying them*. Devoid of the profoundness of a purely speculative philosophy, my essay on the *Cosmos* treats of the contemplation of the universe, and is based upon a rational empiricism, that is to say, upon the results of the facts registered by science, and tested by the operations of the intellect. It is within these limits alone that the work, which I now venture to undertake, appertains to the sphere of labor to which I have devoted myself throughout the course of my long scientific career. The path of inquiry is not unknown to me, although it may be pursued by others with greater success. The unity which I seek to attain in the development of the great phenomena of the universe is analogous to that which historical composition is capable of acquiring. All points relating to the accidental individualities, and the essential variations of the actual, whether in the form and arrangement of natural objects in the struggle of man against the elements, or of nations against nations, do not admit of being