

at the spot where it originated, and passes from the consideration of the known to the unknown, of the near to the distant. It corresponds with the method pursued in our elementary works on astronomy (and which is so admirable in a mathematical point of view), of proceeding from the apparent to the real movements of the heavenly bodies.

Another course of ideas must, however, be pursued in a work which proposes merely to give an exposition of what is known—of what may in the present state of our knowledge be regarded as certain, or as merely probable in a greater or lesser degree—and does not enter into a consideration of the proofs on which such results have been based. Here, therefore, we do not proceed from the subjective point of view of human interests. The terrestrial must be treated only as a part, subject to the whole. The view of nature ought to be grand and free, uninfluenced by motives of proximity, social sympathy, or relative utility. A physical cosmography—a picture of the universe—does not begin, therefore, with the terrestrial, but with that which fills the regions of space. But as the sphere of contemplation contracts in dimension our perception of the richness of individual parts, the fullness of physical phenomena, and of the heterogeneous properties of matter becomes enlarged. From the regions in which we recognize only the dominion of the laws of attraction, we descend to our own planet, and to the intricate play of terrestrial forces. The method here described for the delineation of nature is opposed to that which must be pursued in establishing conclusive results. The one enumerates what the other demonstrates.

Man learns to know the external world through the organs of the senses. Phenomena of light proclaim the existence of matter in remotest space, and the eye is thus made the medium through which we may contemplate the universe. The discovery of telescopic vision more than two centuries ago, has transmitted to latest generations a power whose limits are as yet unattained.

The first and most general consideration in the Cosmos is that of the *contents of space*—the distribution of matter, or of creation, as we are wont to designate the assemblage of all that is and ever will be developed. We see matter either agglomerated into rotating, revolving spheres of different density and size, or scattered through space in the form of self-luminous vapor. If we consider first the cosmical vapor dispersed in definite nebulous spots, its state of aggregation will