

that is, the distinction between the mathematics and the objects of Natural Philosophy.

10. The objects of Natural Philosophy are the facts or data of the science. The knowledge of these is only to be obtained by observation. Jupiter placed at a certain distance from the sun, and moving in a certain direction, and with a certain velocity, is an object. His satellites, with their positions and their motions, are also so many objects. Any piece of matter, including those attributes which it is the part of Natural Philosophy to take cognizance of, such as weight, and magnitude, and movement, and situation, is an object of this science. Altogether they form what may be called the individual and existent realities of the science. And Lord Bacon has done well in having demonstrated that for the knowledge of these we must give ourselves up exclusively to the informations of experience; that is, to obtain a knowledge of the visible properties of material things we must look at them, or of their tangible properties we must handle them, or of their weights or motions or distances we must measure them.

11. Thus far, then, do the applications of the Baconian Philosophy go, and no farther. After that the facts or objects of the science have in this way been ascertained, we perceive certain mathematical relations between the objects from which we can derive truths and properties innumerable. But it is not experience now which lights us on from one truth or property to another. The objects

meaning, as comprehensive of the duties owing to God in heaven, as well as to our fellow-men upon earth.