of matter. The former, as being more accessible to the exer cise of thought, appertains to mathematics; the latter, from its apparent mysteries and greater difficulties, falls under the domain of the chemical sciences. In order to submit phenomena to calculation, recourse is had to a hypothetical construction of matter by a combination of molecules and atoms. whose number, form, position, and polarity determine, modify, or vary phenomena.

The mythical ideas long entertained of the imponderable substances and vital forces peculiar to each mode of organization, have complicated our views generally, and shed an uncertain light on the path we ought to pursue.

The most various forms of intuition have thus, age after age, aided in augmenting the prodigious mass of empirical knowledge, which in our own day has been enlarged with ever-increasing rapidity. The investigating spirit of man strives from time to time, with varying success, to break through those ancient forms and symbols invented, to subject rebellious matter to rules of mechanical construction.

We are still very far from the time when it will be possible for us to reduce, by the operation of thought, all that we perceive by the senses, to the unity of a rational principle. It may even be doubted if such a victory could ever be achieved in the field of natural philosophy. The complication of phenomena, and the vast extent of the Cosmos, would seem to oppose such a result; but even a partial solution of the problem—the tendency toward a comprehension of the phenomena of the universe—will not the less remain the eternal and sublime aim of every investigation of nature.

In conformity with the character of my former writings, as well as with the labors in which I have been engaged during my scientific career, in measurements, experiments, and the investigation of facts, I limit myself to the domain of empirical ideas.

The exposition of mutually connected facts does not exclude the classification of phenomena according to their rational connection, the generalization of many specialities in the great mass of observations, or the attempt to discover laws. Conceptions of the universe solely based upon reason, and the principles of speculative philosophy, would no doubt assign a still more exalted aim to the science of the Cosmos. I am far from blaming the efforts of others solely because their success has hitherto remained very doubtful. Contrary to the wishes and counsels of those profound and powerful thinkers who