

tions of the heavenly bodies. But these and similar facts had been observed from the creation millions of times. Why not with the same result? Water had risen in vacuums: bodies had vibrated in the air; apples had fallen from the plucking of the fatal one in Paradise till the fall of the fortunate one which awakened the "patient thought" of the Great Philosopher. The facts had been witnessed, but the causes which produced them had not been sought after.

How often, indeed, do we tread upon the very threshold of the *arcana* of nature, the most important discoveries, or the richest mines of intellectual wealth, without being conscious of our proximity to them. Like the rich mines of our vast Continent, which have for ages, been trodden under the foot of the untaught aborigines, undiscovered, or when disclosed, their value unknown; but when sought for by the patient intelligent observer, they are found. As the explorers multiply, new mines of increased wealth are brought to light, until the discovery of a gold mine excites no more astonishment than the passing events of the day. Let the observers of nature be multiplied from a few to thousands or millions, and who could predict the glorious result. Let the continents and the islands, the water and the land, on their surface; and in their depth, be filled with anxious inquirers into the secrets of nature; let them question her closely, and she will reveal ten thousand wonders more marvellous than those already known. An ample field for discovery still remains. The sciences are as yet far removed from perfection; they are but in their infancy; many of them have but just begun their progress; the elements of others are still uncertain or undiscovered. The researches of ages may be necessary to give them symmetry and beauty. Of this we have an illustration in the history of science. In those ages when only a few solitary individuals directed their attention to such pursuits, little or no progress was made in the various departments of science. But when the human mind arose from its slumber and burst its fetters, and the number of rational investigators began to increase, science and art were accelerated in their progress. When the Academy of Sciences in Paris, and the Royal Society of London were established, some of the sciences of the present day had no existence in name. Similar societies soon sprang up in different parts of Christendom under the name of "Literary Associations," "Society of Arts," "Mechanics' Institutes," &c. These have brought together the scattered fragments, the facts, the elements of truth, and consolidated them into the form of well arranged sciences.

Nor let it be objected that the great bulk of mankind are incapable either from want of time or ability, of making discoveries. All have the same senses and the same powers of reasoning; and the great book of the universe, from which all discoveries have been made, is equally open to all, from the peasant to the king. We cannot open our eyes, we cannot step, or breathe, without being surrounded with mysteries more mysterious, and truths more profound, than those which have ever

yet been revealed to the mind of mortal from the volume of nature.

Let inquirers go forth; let men engaged in the practical pursuits of life be conversant with science, and let scientific men become students of nature, and a new and vigorous impulse will be given to every department of science. The vast universe has never yet been thoroughly explored; we have but commenced the search; we are only sporting with the pebbles upon the shore of the boundless ocean of undiscovered truth. We have carelessly examined a few grains of sand upon the surface of our globe, but its depths remain unexplored; we have caught a glimpse of the nearest of the heavenly bodies, but the vast wilderness of worlds lie beyond the reach of the most powerful glasses. Descending to the manifold and diversified creatures which swarm the earth, how little is known of their nature and relations, and how imperfectly that little. Of things animate and inanimate, too minute or too remote for the eye or for glasses, all are inwrapped in impenetrable mystery; and of things visible how imperfect our knowledge beyond the declaration of Holy Writ, that God is their Author. That Author—the Infinite Perfection—how immeasurably beyond our comprehension!

Till the universe in all its aspects, so far as it lies within the range of human inspection, be more thoroughly explored, uncertainty will continue to rest upon many interesting departments of knowledge, and many of our most specious theories in the sciences must be considered as being built upon slender and unstable foundations. The propensity to theorize without facts, has led to all the errors and conflicting hypotheses with regard to both mind and matter. The observance of fact is too slow a process; the formation of theories is more in accordance with our impatience. Consequently theory has been reared upon theory, and system upon system; each obtaining its admirers and period of applause, till subsequent discoveries have swept them away as a dream or vision of the night. The crystalline spheres with which Ptolemy had enclosed the heavens, are dashed to pieces; the vortices of DesCartes have long since ceased their whirling; the earth which Tycho—the Danish astronomer—placed in the centre of the universe is now in rapid motion through the skies; the abyss of water with which Burnett filled the centre of the earth, is now converted into a mass denser than the solid rock; the subtle ether which formerly accounted for so many phenomena, has become electricity and heat; the four elements of the ancients have multiplied into sixty; and the sparkling diamonds in the heavens, have become ponderous worlds or centres of systems. Such will be the fate of all theories not founded upon fact. They will perish by their own intrinsic infirmity. The human mind, too impatient to collect facts, leaps at the conclusion by some bold theory. The period has not yet arrived when any material portion of the human family devote their attention even partially to science; the great body of mankind still suffer their faculties to lie in a state of languor and inactivity, and those who are more vigorous, are too much