

nown, and yet some could tell the exact arrangement of its parts, and give a section of it. The chaotic fluid was analysed and the proportion of its compound estimated; the history of Noah's flood was given from its commencement to its fall, with a full explanation of the source from which the waters came, and the hidden cavities to which they retired, and the precise district beneath us in which the winds were born was accurately marked out. The details of creation were given with a circumstantiality worthy of eye witnesses; all that happened before Adam's birth being fully known, nor was the repetition of the great scene when our "childless earth looked tearfully to heaven," after man's destruction, neglected; it also was a theme minutely expatiated upon.

Thus was science wounded by those who professed to be her votaries till Werner introduced habits of observation, and taught the necessity of studying Geology as well as the other branches of knowledge, by the rules of strict induction. His lectures at Freyburgh, and his published works, created a new school of distinguished ability and zeal, and were the means, in themselves, and in the controversies they excited, of revolutionizing the science, and of establishing it on the firm basis on which it now stands. But his doctrines were far from being wholly correct; he was guilty of generalizing too freely, and erred in applying to the whole surface of the globe, inferences drawn from the study of the phenomena of a limited district. He taught that the whole system of rocks was formed by precipitation from water, and that the various formations connected so many coats round the whole globe. The chaotic fluid, according to him, was a menstruum of wondrous powers, in which were held suspended all the particles that, in countless contributions, now form the inorganic creation. Metals and minerals of all kinds, many of them indissoluble by human skill, were resolved by it and blended in the confused mass, till, by Almighty power, the various states now met with were thrown down, each simultaneously, over the whole world.

This theory met with determined opposition from the first, on the continent, but it was in Britain that it was most determinedly combated, and finally overthrown. In 1788, Hutton of Edinburgh entered the lists, denying all the distinguishing doctrines of Werner's school. Water, he held, was not the only agent employed in the formation of the solid crust of the earth. Some rocks he referred to deposition from water, but others he regarded as of igneous origin. "He was the first who sought to explain the former changes of the earth's crust, by reference exclusively to natural agents, and to dispense entirely with all hypothetical causes." His theory we may briefly state in his own words, as quoted by Lyell, (*Prin. of Geology*, vol. I., p. 69). "The remains of an older world," said he, "are visible in the present structure of our planet; and the strata which now compose our continents have been once beneath the sea, and were formed out of the waste of pre-existing continents. The same forces are still destroying, by chemical decomposition or mechanical violence, even the hardest rocks, and transporting the materials to the sea, where they spread out, and form strata analogous to those of more ancient date. Although loosely deposited along the bottom of the ocean, they become afterwards altered and consolidated by volcanic heat, and then heaved up, fractured and contorted." Long and fierce was the struggle between the contending parties, and baser weapons than those of argument came at length to be used. The fire worshippers were denounced as enemies of religion, and even as atheists, and, unhappily, the science was identified with them, and loudly denounced as false and profane. But time, which always gives the victory to truth, gradually overcame error, and established the leading principles of their system so completely, that by degrees the Wernerians became extinct. To this result the formation of the London Geological Society, in 1807, greatly conduced, though even their caution and neutrality required many years to remove from the public mind the dread felt toward the science. Now, however, this is achieved, and we hear no more of inquiries into the origin of things, nor of opposition to the doctrine of the existence of creations prior to the present, save from single individuals who represent no party. The Christian no longer looks on Geology as the enemy of religion, but rejoices in the testimony it furnishes in its support; the proof it yields that the God of the Bible and the God of nature are one; and that the sure result of every new advancement in knowledge, is to entrench the citadel of our faith, and to give the believer even increasing confidence of the divine origin of that volume on whose declarations and promises he grounds his hopes.

In the series of papers, of which this is the first, we purpose, should God in his mercy continue our health, to lay before our readers a succinct statement of some of the leading points in this delightful study, whose beginning is with those early times of which nature herself is the historian, tracing step by step the changes that have passed on our world, from the first of which we have any knowledge to that after which our race was called into being, and the earth that now is, was given them as their temporary heritage. The records of this wondrous story are complete save at their commencement, which is hidden from our eyes, the whole of our knowledge being confined in the opening sentence of revelation, "In the beginning God created the heaven and the earth." Beyond this simple declaration we know nothing of the creation of our world, nor can human power ever pierce the thick darkness in which it is concealed. Of the other portions of the history enduring monuments remain, whose testimony cannot deceive us, and may be read by all, though their voice sounds to us from the morning hours of time. Inscribed on marble tablets—encased in the pedestals of the everlasting hills—ages have left them uninjured and in all points the same as they were at first. The fossil remains of the various rocks carry us back to the point of their formation, and with the revelations given by the stony structures in which they are imbedded, restore to us former conditions of our planet, in which nothing animate had more than a remote analogy to present existences, and in which even the inorganic was in aspect different from that which is now. In the present state of the science it is the object of Geology to reconstruct these long passed creations, wearing into a connected whole the different facts that are discovered respecting them, thus gathering materials for future generations, by which the philosophy of the history of our earth may be revealed. This course we shall follow, so far as our knowledge of so extended a subject permits, and we shall feel repaid for our toil, if, through our instrumentality, the power and wisdom and goodness of that Great Being by whom the whole fabric was created at first and is sustained now, displayed as they are in unfading characters on every leaf of this great book of nature, be impressed in any degree more vividly than before, on even a single mind.

#### THE LITTLE GIRL'S HEART.

The following dialogue occurred one day between a pious father and his little daughter. Every little girl who reads the Evangelist, and every other little girl ought to understand what God means, when he says, "My son, or my daughter, give me thine heart." No little girl can go to heaven till she has given her heart to God. Every little girl who reads this dialogue may suppose, if she pleases, that we have selected and printed it to help her to learn something more about her heart.

"Pa," said Maria suddenly, one day after she had been thinking for some time, "Pa, what does heart mean? When you talk about my heart, I can't think of anything but those gingerbread hearts that we eat."

"You know, dear, that your heart is not anything which you can see."

"O yes, pa, I know that, I know my heart is not like those, but I want to know what it is like."

"You know there is something within you, which loves and hates; this something is your heart. So when God says, 'Give me your heart,' he means, 'Love me.'"

"Pa, it seems as if I wanted to love God, but I don't know how."

"You know how to love me, don't you?"

"O yes, papa."

"But I never told you how to love me."

"O, but that is very different,"

"Different—how?"

"Why, papa, I see you, and know all about you, and you love me."

"Do you love nobody that you have never seen, Maria?"

"I don't know, papa; yes, to be sure, I love grand-papa, and uncle George, and aunt Caroline. But then I have heard you talk about them, papa, and I know that you love them, and they have sent me presents."

"So I have talked to you about God, and you know that I love Him, and he has made you more presents than every body else in the world. Besides, you love people sometimes who have never given you anything, and whom none of us have ever seen."