

laws of definite proportion, cannot be the same on Saturn as upon the earth, and it is highly probable, that different senses would be required to make these properties perceptible. If from the body of Saturn, we turn our attention to the double ring by which it is surrounded, we must admit a former condition of that planet, which can never return by any known secondary causes in present operation. Thus both geology and astronomy lead us to acknowledge a first Almighty cause, and a commencement of the present order of things, dependent upon his will.

In offering the preceding remarks, I have not been influenced by a desire to oppose the opinions of others, but to support what appears to me to be the truth.

I shall now take leave of the reader in the words with which the last edition was concluded.

It may be right to advert to an enquiry that has frequently been made—*What advantage can be derived from the study of geology?*

The value of every science must ultimately rest on its utility: but in making the estimate, we ought not to be guided, alone, by the narrow view of immediate gain. The material universe appears destined to answer two important purposes: the first of which is to provide for the physical wants of its various inhabitants. Now, in relation to this purpose, the science which teaches us the structure of the earth, and where its mineral treasures may be found, can scarcely be deemed devoid of utility, by a nation deriving so much of its comfort and wealth from its mineral resources. But, beside supplying our physical wants, the external universe is destined to answer a nobler purpose; its various objects appear intended to excite our curiosity, and stimulate our intellectual powers, to the discovery of those laws by which the successive events we observe in nature are governed. Without this excitement, man would for ever remain the mere creature of animal sensation, scarcely advanced above the beasts of the forest; and the universe would be to him a mute and unmeaning succession of forms, sounds, and colours, without connection, order, or design. In those sciences which have attained the highest degree of perfection, the skill of the Creator, and the ends and uses of the different parts are most apparent. Geology has not yet made sufficient progress to carry us far in this path of enquiry; but we see enough to discover, that the apparent disorder into which the strata on the surface of the globe are thrown, and the inequalities which it presents, are absolutely necessary to its habitable condition. The distribution of its mineral treasures, and particularly of coal, to the cold and temperate regions of the globe, is well deserving attention, and implies a prospective regard for the wants of civilized man: but a cold-hearted philosophy, under the sanction of a quaint ex-