

Let us then endeavour to ascertain by what means we may become acquainted with the structure of the solid covering of our globe. Were these means bounded by the power of man to penetrate below the surface, our knowledge must ever remain very limited and imperfect; but natural operations have greatly facilitated our inquiries, and have broken the rocky pavement of the globe, and raised up or laid bare the mineral substances of which it is composed. By an attentive examination of the situations where the rocks and strata are thus exposed to our research, we lay the foundation of the science denominated Geology.

Geology is derived from two Greek words, *ge* "the earth," and *logos* "reason," and signifies the Science of the Earth. Werner and his disciples, and also some of the French geologists, have changed the term into *geognosy*; but for this change no sufficient reason can be assigned, and it is contrary to established analogies of language.* Philosophers, in former ages, neglected the examination of the earth, and contented themselves with vain speculations respecting its formation; whereas the only proper answer to the question, *How was the world made?* is briefly this—"By the almighty power of its Creator." We may however be permitted, and indeed we are almost irresistibly impelled, to inquire into the nature of the secondary causes, that have been operative in reducing the surface of our globe to its present state. This inquiry comprises what may properly be denominated Speculative Geology. Nor is this, as some assert, entirely useless: the advocates of particular systems have engaged in an active examination of nature to support their opinions, and have "compassed sea and land to gain proselytes:" thus numerous facts have been discovered, with which we should not have been acquainted had they remained idle in their studies.

The earth is now well known to be one of those globular bodies called planets, that revolve round the sun in orbits nearly circular, and in stated periods of time, which bear a certain ratio to their respective distances from it. They turn round their axis with different degrees of velocity; and this motion appears to have had considerable influence on their external shape, by enlarging their equatorial diameters; they are not perfect spheres, but are more or less flattened at their poles.

In the planet Jupiter, the velocity of the equatorial parts is more than four hundred miles per minute, whilst in the same time the equatorial parts of the Earth have moved only seventeen miles. A difference between the polar and equatorial diameter of Jupiter is perceptible with a telescope that has a distinct magnifying power of a hundred times, and it is ascertained to be as 12 to 13. The equa-

* Nothing can be more unmeaning than the apologies that have been offered for substituting (*gnosis*) "knowledge," for (*logos*) "reason." By the same rule we ought to change meteorology, physiology, &c. into meteorognosy, physiognosy, &c.