

known, the problem of the history of the successive conditions of the globe becomes almost desperate.

There is, however, at any place considered alone, a scale left us in the crust of the earth, by which to measure exactly the order of antiquity among the terms of the series of organic life, and to compare the relative antiquity of these terms at different and remote places, often with perfect satisfaction, and generally within moderate limits of error. This scale is the series of stratified rocks ; and thus a great difficulty is overcome, and many of the inorganic and organic productions of older nature are capable of being arranged in the order of their successive appearance. We must, therefore, explain the nature of this fundamental scale, and illustrate its application ; for we are, perhaps, not in a state to define the extent of its applicability.

Series of Stratified Rocks.

The crust of the earth is, for the most part, stratified — that is to say, the most abundant of the materials whereof it is composed, are in the form of widely extended and comparatively thin layers (called strata), laid one upon another, to a great numerical amount ; these strata were, beyond all question, deposited in water, because many of them contain marine or fresh water shells, fishes, corals, and other marine exuvie (and even were this not the case, the fact of the production of analogous or very similar strata beneath modern waters would justify the inference) ; therefore, *the lowest were formed first, the uppermost last.* To attempt proof of such a proposition would be to outrage common sense : he who cannot supply to himself the proof that the lowest layers of sediment produced by the waters of a pond, lake, river, or ocean, were deposited before the upper ones, is incapable of apprehending any natural truth. Yet, upon this simple and self-evident proposition rests the whole body of geological inferences which include relative time.