

comparatively few species are universally diffused, they possess remarkable persistence over wide areas, and even when they are replaced by others, the same general facies of fossils remains. Hence the stratified formations of two countries geographically distant, and having little or no lithological resemblance to each other, may be compared and paralleled simply by means of their inclosed organic remains.

Order of Superposition—the Foundation of Geological Chronology.—As sedimentary strata were laid down upon one another in a more or less nearly horizontal position, the underlying beds must be older than those which cover them. This simple and obvious truth is termed the Law of Superposition. It furnishes the means of determining the chronology of rocks; and though other methods of ascertaining this point are employed, they must all be based originally upon the observed order of superposition. The only case where the apparent superposition may be deceptive is when the strata have been inverted, as in the Alps (pp. 900, 901), where the rocks composing huge mountain masses have been so completely overturned that the highest beds appear as if regularly covered by others which ought properly to underlie them. But these are exceptional occurrences, wherein the true order can usually be made out from other sources of evidence.

PART II. JOINTS

All rocks are traversed more or less distinctly by vertical or highly inclined divisional planes termed **Joints**.¹

¹ M. Daubrée has proposed a classification of the various divisional planes of rocks due to rupture of original continuity, which he groups together as **Lithoclasses**. 1. Under the term **Leptoclase** he classes minor fractures, which may be either (*a*) **Synclases**, produced by some internal mechanical or molecular