

The evidence from the superposition of strata, or what the French call *gisement*, is based upon a self-evident truth. In all stratified rocks that have been formed or deposited by water, the lowest stratum is the most ancient ; or, in other words, every stratum is older than the stratum that covers it ; unless, by some violent dislocation, the strata have been overturned, or removed from their original position. What is true with respect to two strata, may be applied to two series of strata, that occur under each other : thus, we are certain that the red sandstone and marl under the lias beds, are more ancient than the latter ; and as both formations preserve the same character over a great extent, whenever we meet with them in other situations, where the superposition is not apparent, we may safely conclude, that the red sandstone is more ancient than the lias, and occurs under it.

We cannot, however, apply the same evidence to two groups of strata formed in detached lakes or basins, because, being deposited in different localities, they never occur superimposed on each other. Let us suppose that two ancient lakes, situated at a considerable distance, had become dry in remote ages, and that a stratum of calcareous marl were found in the ancient bed of each lake ; it would be evidently impossible, from these data, to determine which stratum was the most recent, or whether their ages were coeval. Let us, for the better distinction of the stratum of calcareous marl in each lake, call the one stratum A, the other B. Suppose the geologist, who had seen the marl beds, were to observe, in a neighbouring steep bank or cliff, two marl beds similar to A and B, but separated by a bed of sandstone, he would have no doubt that the lower marl was the most ancient ; but he could not apply this to determine the relative ages of the lake-marl strata, A and B. Were he, however, to discover a number of shells of one species in the lower marl bed of the cliff, and another species in the upper marl bed ; and were he afterwards to find the same species of shells that were in the lower cliff marl, in the lake-marl bed A, and the species that were in the upper cliff marl, in the lake marl bed B ; he would then have strong presumptive evidence, that the lake-marl A was more ancient than the lake marl B. The evidence from organic remains, or what is technically called the zoological characters, becomes more satisfactory in proportion to the number of instances in which it can be supported by the evidence from position.

In the above example of the strata of calcareous marl in the two ancient lake beds, the evidence of their relative ages derives all its value from the original evidence of position observed in the marl beds of the cliff. The evidence from organic remains alone, must ever be attended with uncertainty, unless originally confirmed by the evidence from superposition. Animals whose remains are deposited in distant basins, may be of different species ; but this does not prove that they did not live at the same period, as we find in the present