such organisms in any rock at once indicates the great division of geological time to which the rock should be assigned.

The type-fossils of a system or formation, having been ascertained from a sufficiently prolonged and extended experience, serve to identify that series of rocks in its progress across a country. Thus, as we trace a formation into tracts where it would be impossible to determine the true order of superposition, owing to the want of sections, or to the disturbed condition of the rocks, we can employ the type-fossils as a means of identification, and speak with confidence as to the succession of the rocks. We may even demonstrate that, in some mountainous ground, the strata have been turned completely upside down, if we can show that the fossils in what are now the uppermost layers ought properly to lie underneath those in the beds below them.

Prolonged study of the succession of organic types in the geological past all over the world, has given palæontologists some confidence in fixing the relative age of fossils belonging even to previously unknown species or genera, and occurring under circumstances where no order of superposition has been made out. For instance, the general sequence of mammalian types having now been settled by the law of superposition, the horizon of a mammaliferous deposit may be approximately determined by the grade or degree of evolution denoted by its mammalian fossils. Thus, should remains be generically abundant, differing from those now living and presenting none of the extreme contrasts which are now found among our higher animals, should they embrace neither true ruminants, nor solipeds, nor proboscidians, nor apes, they might with high probability be referred to the Eocene period.[21] Reasoning of this kind must be

[21] Gaudry, "Les Enchainements du Monde Animal," 1878, p. 246.