

lacustrine, and fluviatile, has been formed since the date of the truly tertiary strata.

The evidence for this opinion is absolutely conclusive, as to the great body of tertiary strata: it is past a doubt, that, since the age of the palæotheria in the formations of Paris, the same physical regions have been tenanted by wholly different races of animals. The same conclusion is equally and easily proved for the basins of London and Hampshire, and for many other tracts in Europe; and, if we did not inquire very scrupulously, these partial truths might be thought to justify a general inference that the tertiary strata could always be clearly separated from the overlying diluvial and alluvial sediments. But we must not disguise the real difficulty which occurs to the candid inquirer, who wishes to find out laws of phenomena as a basis for theory, rather than to rest satisfied with a conventional system.

By what rule of practice, or deduction from theory, does the geologist discriminate between the Sicilian tertiaries, with 95 per cent. of existing species of shells, and the conchiferous gravels and sands of Holderness and Lancashire, in which, among twenty species of shells now living in the German Ocean, *one* occurs which is not yet known? If the Lancashire shells are, like those of Speeton, Uddevalla, and the coasts of Devon and Calvados, raised beaches, and to be classed in the modern epoch, why are the Sicilian deposits ranked as tertiary? At what place in the scale of *percentage* of species is the line of division to be drawn, and how is this division to be justified?

The gravel which is spread over great surfaces in England, is called diluvial, and supposed to be the product of great but transient disturbances in the level of land and sea: for another example, the dispersion of blocks and gravel from the High Alps might be quoted as an effect of this kind, according to the view of M. Elie de Beaumont; but, if such be the effect of elevation of mountain ranges, may we not expect somewhere to find