

showed that a number of deposits in the Paris and London basin, in the Belgian and in the Vicentinian basins, contained only about 3 per cent. existing species and 97 per cent. extinct species; and that of 1,400 investigated species, only 42 continue upward into the younger group of Tertiary rocks which comprise the Faluns of Touraine and Aquitania, the deposits of the Vienna and Hungarian basin, of Poland, and the Superga, near Turin. In these localities, 18 per cent. existing species are represented. In the third and youngest subdivision of the Tertiary rocks comprising the sub-Apennine formation of Italy, the marine deposits of Greece, and the Crag of England, there are 52 per cent. existing species. The still younger bivalve banks of Uddewalla, Sicily, Nice, etc., contain 96 per cent. existing species. The complete Tables of Deshayes were published in the year 1833 in Lyell's *Principles of Geology*. It is difficult to tell in how far Lyell was the originator of the researches so brilliantly carried out by Deshayes; the distinguished British geologist had certainly devoted special attention to the Tertiary Molluscan faunas during his early journeys in Italy.

Lyell proposed the names of Eocene, Miocene, and Pliocene for the three sub-divisions of the Tertiary rocks which Deshayes had established, and some time afterwards he suggested that the so-called Diluvial deposits above the Tertiary rocks should be termed "Pleistocene." Lyell's terminology was soon universally adopted in geological literature.

Quite independently of Deshayes and Lyell, H. G. Bronn had been conducting a detailed series of researches on the distribution of the organic remains in the Italian Tertiary rocks, and published his results in tabulated form in the year 1831. The learned Heidelberg palæontologist (cf. foot-note, p. 364) demonstrated as leading principles that the total number of the genera and species in the Tertiary deposits increased in the successive horizons of deposit from the lower to the higher, and that the number of extinct species diminished in each successively younger horizon, while the number of existing species became proportionally greater. Applying these principles as a stratigraphical basis, Bronn sub-divided the Tertiary deposits of Europe into two groups, the older of which corresponds almost exactly with Lyell's "Eocene" formation, while the younger or upper series of Bronn corresponds with Lyell's "Miocene" and "Pliocene" formation.