brackish and fresh-water deposits of the Mainz basin, and the brown-coal deposits of Hesse and Rhineland. In *Upper Oligocene*, Beyrich included the Marine formations of Crefeld, Düsseldorf, Cassel, etc. These are succeeded by the typical Miocene formations of the Lower Elbe district, Holstein and Schleswig.

Beyrich's differentiation of the Oligocene formation was supported by Lyell and other eminent geologists, and proved very helpful in the systematic arrangement of the Tertiary deposits. It is noteworthy that there is no marine equivalent in Belgium, France, or England for the Upper Oligocene strata of North Germany. Probably these correspond in age with the fresh-water limestone of Beauce, which is usually classified as Lower Miocene by French geologists. Emendations in Beyrich's sub-division were made by Sandberger in 1863, when he pointed out that the "Cyrena" marls belonged to Upper Oligocene, and that the Lower Miocene should begin with the littoral and brackish-water series, the "Cerithia" and land-snail limestones, and the leaf-sands of the Münzenberg.

The Tertiary basin of the Swabian-Bavarian plateau and the neighbouring margin of the Jura mountains and the Alps is connected on the one side with the Austrian development, on the other side with the North Swiss development of the Tertiary formations, and its relations could only be properly understood after the knowledge of these formations in adjacent areas was fairly well advanced. The monograph of the Molasse deposits in Switzerland, written by Studer (1825), contains a remarkably accurate description of the different formations according to their petrographical constitution and stratigraphical position, but at the time of publication it was quite impossible to assign definite ages to the successive strata. The observations of the Bernese geologist were supplemented by the researches of Escher von der Linth, Braun, and Oswald Heer, so that Studer in 1853, in the second volume of his famous work, *Geologie der Schweiz*, was in a position to give an almost exhaustive exposition of the Swiss Tertiary deposits.

From the composition and stratigraphical position of the parti-coloured Nagelflue deposits, Studer concluded that the materials composing this conglomeratic rock and the Molasse sandstones had been derived from a marginal Alpine chain which was afterwards bent inward at the further folding and