

In 1851, I examined with care the Belgian formations at Rupelmonde and Boom, near Antwerp, and in the Limburg, near Maestricht, and was able, with the assistance of M. Bosquet, to give a table of no less than 201 species of shells of the era under consideration. Of these more than a third proved to be identical with English Eocene testacea, even when I restricted the term Eocene to its most limited sense, extending it no farther upwards than the Middle Eocene or nummulitic formations.* For this reason I called the Limburg or Kleyn Spawen beds Upper Eocene, giving as my reason "that they resembled the older formations in their fossils as much as some of the different divisions of the Eocene series in France and England resemble each other; as much, for example, as the Barton Clay in Hampshire agrees with the London Clay proper, or the Calcaire Grossier with the Soissonais sands in France."

Subsequently, in the winter of 1852, Professor Edward Forbes examined near Yarmouth, in the Isle of Wight, a deposit occupying a very limited area, but about 170 feet in thickness, which he first determined to be of the same age as the Limburg beds. They were found to be in conformable position with the other tertiary strata previously known in that island, and to contain abundantly some of the most characteristic Kleyn Spawen fossils. He named this deposit "the Hempstead series," and classed it as Upper Eocene, for reasons similar to those which had induced me so to name the Limburg beds of Belgium. They cannot in fact be separated from the subjacent Eocene strata without drawing a line of demarcation confessedly arbitrary, and which would leave a great many of the same species of fossils above and below it. So complete, indeed, is the passage from the Bembridge series (an equivalent of the gypsum of Montmartre, and therefore an acknowledged Eocene formation) into the Hempstead beds, that Professor Forbes places both groups together in his Upper Eocene division, drawing the line between Upper and Middle Eocene at the base of the Bembridge beds.

In opposition to this view two recent authorities, who in the course of the present year (1853) have written on the tertiary formations of Germany, M. Beyrich, before cited,† and Dr. Sandberger,‡ contend that all strata, parallel in age with the Limburg, should be termed Lower Miocene. M. Beyrich affirms that if the strata of the Bolderberg in Belgium, and numerous deposits of contemporaneous date of Northern Germany already enumerated (p. 178), be of the age of the "faluns," then it can be shown that these same beds have so many fossils in common with the Limburg strata, that the latter may fairly be regarded as Miocene, or as an older deposit of the same great period; and he goes on to say that, unless we are prepared to allow the Eocene division to absorb all the overlying tertiary formations, we must begin a new series from the base of the Limburg upwards, calling the latter Lower

* Quart. Geol. Journ. 1852, vol. viii. p. 322.

† Die Conchylien des Norddeusch. Tertiärgeb.: Berlin, 1853.

‡ Uber das Mainzer Tertiärbeckens, &c.: Wiesbaden, 1853.