

arose between M. Elie de Beaumont and M. Voltz,⁸ the former considering the *Grès de Vosges* as the equivalent of the *Rothe todte liegende*, which occurs beneath the Zechstein, while M. Voltz held that it was the lower portion of the Red or *Variiegated Sandstone* which rests on the Zechstein.

In the same manner, from the first promulgation of the Wernerian system, attempts were made to identify the English with the German members of the geological alphabet; but it was long before this alphabet was rightly read. Thus the English geologists who first tried to apply the Wernerian series to this country, conceived the Old and New Red Sandstone of England to be the same with the Old and New Red Sandstone of Werner; whereas Werner's Old Red, the *Rothe todte liegende*, is above the coal, while the English Old Red is below it. This mistake led to a further erroneous identification of our Mountain Limestone with Werner's First Flötz Limestone; and caused an almost inextricable confusion, which, even at a recent period, has perplexed the views of German geologists respecting this country. Again, the Lias of England was, at first, supposed to be the equivalent of the *Muschelkalk* of Germany. But the error of this identification was brought into view by examinations and discussions in which MM. Oeyenhausen and Dechen took the lead; and at a later period, Professor Sedgwick, by a laborious examination of the strata of England, was enabled to show the true relation of this part of the geology of the two countries. According to him, the New Red Sandstone of England, considered as one great complex formation, may be divided into seven members, composed of sandstones, limestones, and marls; five of which represent respectively the *Rothe todte liegende*; the *Kupfer schiefer*; the *Zechstein*, (with the *Rauchwacké*, *Asche*, and *Stinkstein* of the Thuringenwald;) the *Bunter sandstein*; and the *Keuper*: while the *Muschelkalk*, which lies between the two last members of the German list, has not yet been discovered in our geological series. "Such a coincidence," he observes,⁹ "in the subdivisions of two distant mechanical deposits, even upon the supposition of their being strictly contemporaneous, is truly astonishing. It has not been assumed hypothetically, but is the fair result of the facts which are recorded in this paper."

As an example in which the study of geological equivalents becomes still more difficult, we may notice the attempts to refer the strata of

⁸ De la Beche, *Manual*, 381.

⁹ *Geol. Trans.* Second Series, iii. 121.