

similar series of events, which have, in some measure, coincided in time and order; and thus, as we have said, refers us to a theory. But yet, considered merely as a step in classification, the comparison of the geological series of strata in different countries is, in the highest degree, important and interesting. Indeed in the same manner in which the separation of Classificatory from Chemical Mineralogy is necessary for the completion of mineralogical science, the comparative Classification of the strata of different countries according to their resemblances and differences alone, is requisite as a basis for a Theory of their causes. But, as will easily be imagined from its nature, this part of descriptive geology deals with the most difficult and the most elevated problems; and requires a rare union of laborious observation with a comprehensive spirit of philosophical classification.

In order to give instances of this process (for of the vast labor and great talents which have been thus employed in England, France, and Germany, it is only instances that we can give,) I may refer to the geological survey of France, which was executed, as we have already stated, by order of the government. In this undertaking it was intended to obtain a knowledge of the whole mineral structure of France; but no small portion of this knowledge was brought into view, when a synonymy had been established between the Secondary Rocks of France and the corresponding members of the English and German series, which had been so well studied as to have become classical points of standard reference. For the purpose of doing this, the principal directors of the survey, MM. Brochant de Villiers, De Beaumont, and Dufrenoy, came to England in 1822, and following the steps of the best English geologists, in a few months made themselves acquainted with the English series. They then returned to France, and, starting from the chalk of Paris in various directions, travelled on the lines which carried them over the edges of the strata which emerge from beneath the chalk, identifying, as they could, the strata with their foreign analogues. They thus recognized almost all of the principal beds of the oolitic series of England.⁷ At the same time they found differences as well as resemblances. Thus the Portland and Kimmeridge beds of France were found to contain in abundance a certain shell, the *gryphæa virgula*, which had not before been much remarked in those beds in England. With regard to the synonyms in Germany, on the other hand, a difference of opinion

⁷ De la Beche, *Manual*, 305.