

the Alps to those of the north-west of Europe. The dark-colored marbles and schists resembling mica slate¹⁰ were, during the prevalence of the Wernerian theory, referred, as was natural, to the transition class. The striking physical characters of this mountain region, and its long-standing celebrity as a subject of mineralogical examination, made a complete subversion of the received opinion respecting its place in the geological series, an event of great importance in the history of the science. Yet this was what occurred when Dr. Buckland, in 1820, threw his piercing glance upon this district. He immediately pointed out that these masses, by their fossils, approach to the Oolitic Series of this country. From this view it followed, that the geological equivalents of that series were to be found among rocks in which the mineralogical characters were altogether different, and that the loose limestones of England represent some of the highly-compact and crystalline marbles of Italy and Greece. This view was confirmed by subsequent investigations; and the correspondence was traced, not only in the general body of the formations, but in the occurrence of the Red Marl at its bottom, and the Green Sand and Chalk at its top.

The talents and the knowledge which such tasks require are of no ordinary kind; nor, even with a consummate acquaintance with the well-ascertained formations, can the place of problematical strata be decided without immense labor. Thus the examination and delineation of hundreds of shells by the most skilful conchologists, has been thought necessary in order to determine whether the calcareous beds of Maestricht and of Gosau are or are not intermediate, as to their organic contents, between the chalk and the tertiary formations. And scarcely any point of geological classification can be settled without a similar union of the accomplished naturalist with the laborious geological collector.

It follows from the views already presented, of this part of geology, that no attempt to apply to distant countries the names by which the well-known European strata have been described, can be of any value, if not accompanied by a corresponding attempt to show how far the European series is really applicable. This must be borne in mind in estimating the import of the geological accounts which have been given of various parts of Asia, Africa, and America. For instance, when the carboniferous group and the new red sandstone are stated to

¹⁰ De la Beche, *Manual*, 313.