

Peninsula, and Russia, were comparatively late in being examined and surveyed, and it seemed scarcely possible to determine the parallelism of the facies in these areas with the Jurassic deposits of North-Western and Central Europe. In the Swiss Alps, geologists have identified the age of the larger Jurassic groups, but have not attempted a detailed comparison with the extra-Alpine zones. In the Bavarian, Austrian, and Italian Alps, as well as in the Apennines and the Carpathians, the Alpine facies is also fundamentally different from the extra-Alpine, but it has been possible to identify locally some of Oppel's zones. Alpine geologists invariably try to recognise in the Alpine Trias the equivalents of Oppel's chief groups, *Lias*, *Dogger*, and *Malm*.

No serious attempt has ever been made to apply Oppel's zonal nomenclature in Alpine geology. It has been customary, especially in Austria, to designate the various sub-divisions with the names of localities (Adneth limestone, Gresten, Hierlatz, Allgäu, Vils, Stramberg strata, etc.).

After the controversy regarding the proper systematic position of the *Avicula contorta* zone or Rhætic group had been brought to a fairly satisfactory conclusion (p. 479), considerable discussion began to be raised about the proper limit between the Jurassic and the Cretaceous formations. In France, South Germany, and in the Swiss Jura there was no difficulty, as the uppermost numbers of the Jurassic system (Portland and Purbeck strata) are well defined both petrographically and palæontologically, and the limit between these horizons and the Cretaceous formations can be readily determined. On the other hand, in the south of England, North Germany, and Belgium, a fresh-water formation (Weald clay and Hastings sand) is interposed between the uppermost Jurassic and the Cretaceous horizons, and creates a difficulty in determining the precise limit of the two formations. Mantell united the fresh-water formation with the Cretaceous Greensand; Webster and Fitton combined them with the Purbeck strata, and regarded the group as independent. Sir Richard Owen and Robertson drew attention to the similarity of the Purbeck and Wealden faunas with that of the Stonesfield slate, and placed the Wealden in the Upper Jurassic division. Élie de Beaumont supported the other view, that the Wealden formation was an equivalent of the "Néocomien," and Forbes, Lyell, Topley, the Geological Survey, and most of