

of Thirria and Thurmann for the most part, but had also introduced several new names. Marcou had distinguished twenty-six sub-groups which very nearly correspond with Opper's zones, but he had named his sub-groups not according to leading fossils, but from the names of the localities where they were well developed. It was not altogether surprising then that Marcou should raise some doubts regarding the nomenclature proposed by Opper. The letters which he wrote upon this subject are of interest for their clear representation of the state of Jurassic research at the time, and for many new ideas about the distribution of the Jurassic fossils. Marcou referred to the valuable researches by Edward Forbes, elucidating the differences of marine faunas in the present time, the confinement of certain faunas within definite geographical limits, and the occurrence of particular types at definite ocean-depths. Applying Forbes's principles of biological provinces and bathymetrical horizons to the elucidation of the Jurassic faunas, Marcou drew maps showing the probable distribution of land and water in the successive Jurassic eras, and trying to determine the chief biological provinces in the Jurassic Ocean. He distinguished eight Jurassic provinces, and correlated their geographical position with three "homozic" climatic zones which had exerted an influence on the distribution of the organisms.

The work of Opper has undoubtedly exerted a marked influence upon subsequent stratigraphical research. Although many geologists could not feel convinced of the universal application of a sequence of palæontological zones, the exact method pursued by Opper gave an excellent precedent, and the study of the local developments of Jurassic deposits was renewed with fresh vigour. A student of Opper's, W. Waagen, endeavoured to identify the same zones in Franconia and Switzerland; the name "Jurassic System" was generally adopted after the publication of Opper's work, and numerous memoirs appeared wherein the older groups were subjected to more detailed examination. Buckman thought it possible to sub-divide the English series into even more limited horizons than were represented by Opper's zones, and sub-divided the latter into "Hemeræ," each of which was characterised by a typical Ammonite species.

The Jurassic deposits of the Alps, the Pyrenees, the Apennines, the Carpathians, the Balkan mountains, the Iberian