

land or a marginal swamp, an estuary or an inland sea. The conditions which prevailed over any one area during a definite period were often transferred during the following period to some neighbouring area, so that faunal similarities of a misleading character were bound to arise. This seems to be the explanation of the increasing difficulty that is experienced in determining the precise stratigraphical equivalents in adjoining districts; the Synchronous Tables become more and more complicated as the knowledge of stratigraphical data becomes more specialised.

The newer researches in Hungary, the Balkan lands, Greece, Roumania, Russia, India, and other parts of the world, have certainly succeeded in establishing the parallelism of the great divisions (Eocene, Oligocene, Miocene, Pliocene), but the zonal sub-divisions are extremely diverse. In North and South America, the recognition even of the main divisions is very uncertain, and it is impossible to apply any of the European zonal classifications. It would, however, occupy too much space to record the gradual progress of researches on the Tertiary formations outside Central Europe; or to indicate the debatable stratigraphical complexities that are associated with the history of crust-movements during Tertiary epochs.

*J. Quaternary Formations.*—Whereas the beginnings of the present sub-division of the Tertiary formations extend as far back as the first decades of the nineteenth century, the detailed investigation of the youngest geological system was reserved for the last three decades of the century. Buckland, in 1823, described the deposits between the Tertiary series and the sediments at present in course of formation. He regarded these post-Tertiary deposits as the discharge from a universal flood, and applied to them the name Diluvium in contradistinction to Alluvium, the name given to all modern accumulations of deposit. Lyell, in 1839, proposed to use the term Pleistocene for the Diluvium of Buckland, and in 1854 Morlot suggested Quaternary, changed by Bronn to Quartary (Quartär), a term which appears very often in the German literature, although never in the English form.

The varied constitution of the Pleistocene deposits (pebble, sand, clay, loess, bone breccias, boulder accumulations, erratic blocks, moraines) and the frequent absence of organic remains made it very difficult to determine the age of the different