

now generally understood, includes the lowest series of Primary, or, as they are now called, Palæozoic deposits (see Book VI. Part II. "Palæozoic").

But it has been well established that, while in some regions the base of the Cambrian system is separated by a strong unconformability from all rocks of older date, in other tracts it can only be defined by an arbitrary line, beneath which lie other still more ancient sedimentary formations. In these primeval deposits there are records of denudation and deposition, of alternate sedimentation and terrestrial movements, of stupendous and prolonged volcanic activity, and of distinct though scanty proofs that plant and animal life had already appeared upon the face of the globe. So far as our knowledge yet goes there is no means of ascertaining the synchronism or homotaxis of these formations in widely separated regions. Fossil evidence entirely fails here as a guide, and mere mineral characters are only reliable within comparatively limited areas. All that can for the present be attempted is to determine the true order of sequence, tectonic relations and general structure of the several distinct formations in each country where they occur, without in the meantime any serious attempt at correlation.

It must further be observed that these oldest stratified rocks have very generally undergone more or less alteration during the numerous terrestrial disturbances of geological history. Lying as they do at the base of the stratified part of the earth's crust, they have shared in the movements by which, during the lapse of geological time, the fossiliferous rocks have been affected. Every intruded mass of igneous rock, every volcanic outburst, every agent of contact or of regional metamorphism had first to pass through them before