

the lithological types, and each of these bands will be composed of beds and each bed may contain forms successively older or younger than the beds of the same zonal band above and below. When there has been (more or less) continuous depression of the land for a long interval, with (more or less) continuous supply of material suitable for all three zones, then subsequent uplift and erosion over extensive areas, the formation resting upon the oldland surface will normally be a sandstone. The earlier formed portion of this sandstone will naturally carry fossil forms appropriate to the age in which they lived, and the later formed likewise. Ami has recently drawn attention to arenaceous character of the formations resting upon the older rocks, along the axis of the Appalachian system, and to the progressive change in faunas from Cambrian types in New Jersey northward to Ordovician types in Canada, as illustrating the progressive depression of the land areas during the progress of early palaeozoic time.¹

Further, it must be noted that, although the normal type of deposits would show the threefold lithological grouping, yet irregularities in the supply of material and variations in the character of that which is supplied, variations which will be of very frequent occurrence, will mean that in the field *only contemporaneous beds in the three zones will be rare*, that *all three types of deposit* may be composed of the *same kinds* of material, a feature frequently seen in the limestone deposits, and, thirdly, that *one or more* of the types may be *completely wanting*.

After a long interval of time during which a succession of deposits has been formed under varying conditions, the sea bottom becomes uplifted, and the new formed rocks are subjected to long continued disintegration, degradation, and dissection. The greater part of the deposits are worn away; fragments only remain here and there, scattered over the area where they were once continuous,

¹ Ami, Geo. Soc. Amer., Winter meeting 1902-03, "The Eparchean Formation." See Bull. G. S. A., Vol. 14.