

gneisses with their accompaniments form an eruptive assemblage of which the component portions may belong to widely different periods of time, it is quite conceivable that a certain group of sedimentary formations may be found in one district to lie unconformably on these gneisses, and in another to be pierced by some of their younger members.

There is likewise some difficulty in fixing the upper limit of the pre-Cambrian formations. Where the Cambrian rocks lie on them unconformably the obvious stratigraphical break forms a convenient line of division. But in some countries a thick mass of conformable sedimentary rocks underlies the *Olenellus*-zone which has been taken as the base of the Cambrian system, and in these instances the line of separation becomes entirely arbitrary. Sections of this nature are of great value, inasmuch as they impress upon the geologist that the artificial character of the divisions by which he classes the geological record is not confined to the fossiliferous formations, but marks also those of the pre-Cambrian series. Unconformabilities, even where widespread, cannot be regarded as universal phenomena, and though of infinite service in classification, should be employed with the full consciousness that the blanks which they represent do not indicate any world-wide interruption of geological continuity, but may at any moment be filled up by the evidence of more complete sections.

With regard to the comparative value of the pre-Cambrian rocks in the chronology of geological history no precise statement can be made. But various circumstances show that they must represent an enormous period of time. We shall see in succeeding pages that from the general character of the Cambrian fauna it must be regarded as certain that life had existed on the earth for a long series