

sheets, through which eruptive acid rocks (quartz-felsites, etc.) have risen.

LIFE.—Much interest necessarily attaches to Cambrian fossils, for excepting the few and obscure organic remains obtained from pre-Cambrian strata, they are the oldest assemblage of organisms yet known. They form no doubt only a meagre representation of the fauna of which they were once a living part. One of the first reflections which they suggest is that they present far too varied and highly organized a suite of organisms to allow us for a moment to suppose that they indicate the first fauna of our earth's surface. Unquestionably they must have had a long series of ancestors, though of these still earlier forms such slight traces have yet been recovered.³ Thus, at the very outset of his study of stratigraphical geology, the observer is confronted with a proof of the imperfection of the geological record. When he begins the examination of the Cambrian fauna, so far as it has been preserved, he at once encounters further evidence of imperfection. Whole tribes of animals, which almost certainly were represented in Cambrian seas, have entirely disappeared, while those of which remains have been preserved belong to different and widely separated divisions of invertebrate life.

The prevailing absence of limestones from the Cambrian deposits of western Europe is accompanied by a failure of the foraminifera, corals, and other calcareous organisms which abound in the limestones of the next great geological series.⁴ The character of the general sandy and muddy

³ Richthofen has suggested that in China possibly some of the deep parts of his "Sinisian" formation (which in its higher parts yields Primordial fossils) may yet reveal traces of still older faunas.

⁴ In the Baltic basin some bands of limestone occur in the comparatively thin series of Cambrian strata. In Scotland the Cambrian system includes some 1500 feet of limestone.