

to pass through some 10,000 feet or more of barren red sandstones and marls, until we again encounter a copious marine fauna in the Carboniferous Limestone. It is evident that between the disappearance of the Silurian and the arrival of the Carboniferous fauna, very great geographical changes occurred over the site of Wales and the west of England. For a prolonged period, the sea must have been excluded, or at least must have been rendered unfit for the existence and development of marine life, over the area in question. The striking contrast in general facies between the organisms in the Silurian and those in the Carboniferous system, proves how long the interval between them must have been.

The geological records of this interval are still only partially unravelled and interpreted. At present the general belief among geologists is that, while in the west and north of Europe the Silurian sea-bed was upraised into land in such a way as to inclose large inland basins, in the centre and southwest the geographical changes did not suffice to exclude the sea, which continued to cover that region more or less completely. In the isolated basins of the west and north, a peculiar type of deposits, termed the Old Red Sandstone, is believed to have accumulated, while in the shallow seas to the south and east, a series of marine sediments and limestones was formed, to which the name of Devonian has been given. It is thus supposed that the Old Red Sandstone and Devonian rocks represent different geographical areas, with different phases of sedimentation and of life, during the long lapse of time between the Silurian and Carboniferous periods. A somewhat similar contrast between the lithological and palæontological characters of the corresponding formations in different parts of the United States and Canada, shows that in America also this geological period was