

ence of the greater portion of the Lower Cambrian (Paradoxides) fauna, a barrier existed that prevented its extension westward of the line mentioned; that towards the close of the time of the Paradoxides fauna that barrier was removed to the northeast, in the vicinity of Newfoundland, and the descendants from the Paradoxides fauna entered the westward seas and spread to the eastern and western basins and formed the Middle Cambrian fauna. What route was taken by the Middle Cambrian fauna after passing to the western side of the outer barrier is not yet traced, but I think from the indications we now have of a continental area, during Lower and Middle Cambrian time, in the central portion of the continent, that the fauna passed to the south around the southern end of the then existing land, and thence north along the west shore. In the Atlantic basin, the Paradoxides fauna persisted to a greater or less extent and mingled with the types of the Upper Cambrian fauna as in the Upper Lingula Flags of Wales.

If this is a correct interpretation of the evidence now known, we may look in vain in the central interior basin for the Paradoxides fauna of the Atlantic basin.

That there was life in the older Cambrian or pre-Cambrian seas of the central interior basin, there is no doubt, as we have found traces of it in the Grand Cañon section of Arizona; and the development of that fauna which from the stratigraphy is pre-Cambrian, is one of the problems awaiting solution.

During the Upper Cambrian (Potsdam of America; Upper Lingula Flags of Wales), the Atlantic and Pacific basins appear to have had free communication with each other, and the faunas now have a facies of the same general character.

The above views are, to a certain extent, theoretical, but the facts demand an explanation other than that the faunas of the Lower, Middle and Upper Cambrian were contemporaneous but in different geographic areas. That the upper and middle faunas were separated by a great interval, is shown by the sections in Nevada and Vermont; and that the middle and lower faunas were not contemporaneous is shown by the biologic evidence and the indirect evidence of the absence of the lower fauna in association with the middle fauna in the Newfoundland area, where they are now found in different strata, but a short distance from each other.

A diagram illustrating the Cambrian sections of America and Europe would show, in the former, that the sequence of life is divided more sharply into three great groups that, in the latter, are more or less broken up. First: by the nearly entire absence of the middle group, and secondly, by the commingling of the upper and lower groups in the European strata and possibly in the Atlantic border sections of New Brunswick and