

Upper Cambrian horizon, leaving but four genera that are alone common to the Middle and Lower horizons. One genus, *Dendrograptus*, is doubtfully identified in the *Paradoxides* horizon of New Brunswick that occurs in the Upper Cambrian, and is, as yet, unknown in the Middle Cambrian. The genus *Agraulos* is also found in the Lower and Upper, but not in the Middle Cambrian. Of species, not one of the 76 of the American Lower Cambrian fauna are known to occur in the Middle Cambrian fauna, which, with its 107 species, stands out clearly from the older fauna and also from the more recent Potsdam fauna, as but three of its species, *Protospongia fenestrata*, *Stenotheca elongata* and *Acrotreta gemma*, are known to occur in the Upper Cambrian, and 16 of the genera in the Middle Cambrian are not known to pass up into the Upper Cambrian or into the Lower Silurian (Ordovician) faunas. Not one species is known to be common to the *Lower* and *Upper* Cambrian horizons.

Having studied the Middle Cambrian fauna more thoroughly than that of the lower and upper horizons, I will speak of it on that account and, also, from the fact that its character and geographic distribution is not as well known as the other two.

As a whole, we notice that it combines the characters of the Lower Cambrian and Upper Cambrian faunas and yet is distinct from each of them. There does not appear to be an equivalent fauna in the Cambrian system of Europe either in Bohemia, the Scandinavian area, or in Wales; but from the Island of Sardinia, Dr. Bornemann has described a group of sponge-like bodies closely related, if not identical with *Elmophyllum* and *Archæocyathus* of the American Middle Cambrian fauna; he also names *Kutorgina cingulata* which is found at this horizon both in Vermont and Labrador. A species of trilobite is referred to *Olenellus*, but I have not seen any illustration of it.

The conditions that developed the Middle Cambrian fauna appear to have been largely peculiar to the American continent. During the deposition of the St. John's series of the Lower Cambrian, or the *Paradoxides* strata, we learn from the European and Eastern American sections, that the fauna was essentially of the same type over the entire basin (Atlantic), and, from evidence known to date, that the fauna did not extend west of a line passing northeast through Eastern Massachusetts to New Brunswick and Newfoundland.

That there were deposits of sediment to preserve the fauna, if it extended westward, is shown by the thousands of feet of sediments below the Middle Cambrian faunas of Utah and Nevada.

From the data we now have, I think that during the exist-