

formations in which it has hitherto been found. In any case it should be looked for in the Pre-cambrian beds.

The latest attempt known to me to unravel the relations of Receptaculites is that of Dr. Rauff in the Transactions of the German Geological Society. He repeats and confirms the observations of Billings as to its structure, differing only in rejecting the pores of the internal wall. He also rightly concludes that it must have been a calcareous organism, and consequently cannot be referred to any of the groups of silicious sponges; but seems to regard its systematic position as still quite uncertain. It may possibly remain so, till either modern analogues, or more ancient and simpler forms, shall be discovered. Receptaculites and its allies are at present known as low as the Lower Ordovician on the one hand, as high as the Carboniferous on the other.

Another primitive and apparently very generalised type is the genus *Archæocyathus* of Billings, one of the oldest and most curious Cambrian fossils. It deserves an additional notice here, in connection with facts and publications of recent dates.

As early as 1865 my attention was attracted to these forms by specimens presented to me by Mr. Carpenter, a missionary to Labrador, and about the same time Mr. Billings was kind enough to shew me specimens which had been obtained by Mr. Richardson of the Geological Survey, in what was then known as the "Lower Potsdam" of L'Anse à Loup in that region, and which he had described in 1861 and 1864, stating that he was in doubt whether they should be referred to corals or sponges. Slices of the specimens were made for the microscope, when it appeared that, though they had the general aspect of turbinate corals, like *Petraia*, etc., they were quite dissimilar in structure, more especially in their porous inner and outer walls and septa, yet they did not closely resemble the porous corals, which besides were regarded as