branches of Syringopora and similar corals included in the mass of Stromatopora.

It is evident from the above description that the animal matter of Stromatopora must have occupied the chambers or interspaces, and must have extended from chamber to chamber through the pores and hollow pillars. Such a structure is obviously that of a rhizoped rather than of a sponge. Further, the arrangement of the laminæ and pillars is very nearly allied to that of Parkeria and Loftusia as described by Carpenter and Brady, which I have myself studied in specimens kindly given to me by Professor T. R. Jones \*. In so far as the hollow pillars and perforated plates are concerned, it has some points of correspondence, though more remote, with Receptaculites. The supposed oscula on which has been based a reference of these forms to sponges are certainly not constant. I have seen large masses of the form above described, presenting more than 30 square inches of surface, without a trace of an osculum; and in those specimons where tubular orifices appeared, I have found that they cut like perforations made by a boring instrument through the mass, irrespective of its structure, and that they were lined with continuous calcareous walls different from the laminæ of the fossil. It is scarcely necessary to say, after the above descriptions, that I attach no scientific value to the ingenious and elaborate attempt of Mr. H. J. Carter ('Annals and Magazine of Natural History,' ser. 4, vol. xix. p. 44) to prove that Stromatoporæ are skeletons of hydroids allied to Hydractinia. The resemblances of Stromatoporæ to these hydroids are altogether superficial, and depend on both having a parasitic and concentric habit of growth. In every essential character they differ entirely, and can have no close zoological affinity. In comparison with Eozoon, the general appearance and habit of growth are so similar that specimens cannot easily be distinguished by the naked eye, or where the minute structures are not preserved. In microscopic structure the thin laminæ of Stromatoporæ correspond to the proper wall of Eozoon. The thickening of the walls corresponds to the supplemental skeleton, and the horizontal tubes to the canals, while the interspaces and the pillars correspond to the chambers and connecting walls of the older fossil. The main structural difference is, that while Eozoon has a delicately tubulated proper wall of Nummuline type, that of Stromatopora has coarser perforations and pores. Stromatopora and Eozoon may both be regarded as large sessile laminated calcareous Rhizopods; but the former presents a less generalized type than the latter, which combines structures that were usually separated even in the Palæozoic period.

Stromatoporce of the type above described are abundant in the Corniferous Limestone. They occur throughout the Upper Silurian and are especially abundant and of large size in the Niagara Limestone, where they abound even in those Dolomitic beds that contain

<sup>\*</sup> More recently I have also studied the remarkably beautiful species of Loftusia from British Columbia described by Mr. G. M. Dawson, which confirm the resemblance of these specimens to Stromatoporæ (see his paper read before this Society, infrà, p. 69).