

shale on the beach, where there was a little band, only about an inch thick, stored with remains of sponges, a small bivalve shell and a slender branching seaweed. This was one small layer in reefs of slate more than one hundred feet thick. We subsequently found two other thin layers, but less productive. Tools and workmen were procured, and we proceeded to quarry in the reef, taking out at low tide as large slabs as possible of the most productive layer, and carefully splitting these up. The results, as published in the Transactions of the Royal Society of Canada,¹ show more than twelve species of siliceous sponges belonging to six genera, besides fragments indicating other species, and all of these living at one time on a very limited space of what is practically a single surface of muddy sea-bottom.² The specimens show the parts of these ancient sponges much more perfectly than they were previously known, and indeed, enable many of them to be perfectly restored. They for the first time connect the modern siliceous sponges of the deep sea with those that flourished on the old sea-bottom of the early Cambro-Silurian, and thus bridge over a great gap in the history of this low form of life, showing that the principles of construction embodied in the remarkable and beautiful siliceous sponges, like *Euplectella*, the "Venus flower-basket," now dredged from the deep sea, were already perfectly carried out in this far-back beginning of life. This little discovery further indicates that portions of the older Palæozoic sea-bottoms were as well stored with a varied sponge life as those of any part of the modern ocean. I figure³ a number of species, remains of all of which may be gathered from a few yards of a single surface at Little Metis. The multitude of interesting details embodied in all this it is impossible to enter into here, but may be judged of from

¹ Additional collections made in 1892 show two or three additional species, one of them the type of a new and remarkable genus.

² 1889, section iv. p. 39.

³ Frontispiece to chapter.