3. Flaggy sandstone and shale, about 20 feet.

4. Hard sandstone with quartz veins, 3 to 5 feet.

5. Hard gray shales and calcareous and dolomitic bands, with some layers sf sandstone—800 feet or more.

6. Apparently underlying these, and occupying a great extent of the shore, are black, gray and red shales and thick beds of gray sandstone, the latter appearing at Mt. Misery and Lighthouse Point, and holding the Graptolites above referred to. These beds must be of great thickness in the aggregate, but they are possibly repeated in part by faults and contortions.

The sponges contained in Band 2 above, are apparently confined to a small thickness of the shale, but in this are quite abundant. They are perfectly flattened, and their spicules are replaced by pyrite; but in some cases they retain the outline of their form, and have their root spicules attached. The spicules were, no doubt, originally siliceous, but they have shared the chemical change experienced by other fossils in this bed, whereby they have lost their siliceous matter and have had pyrite deposited in its place. In some cases, also, the pyritised spicules have been frosted with minute crystals of the same substance, greatly enlarging their size and giving them a mossy appearance. This pyritization of spicules, once probably silicious, is not uncommon in palæozoic rocks, and it arises from the soluble condition of the silica in sponges, and its association with organic matter, which, in some modern sponges, as in Hyalonema, enters into the composition of the spicule itself. These spicules, therefore, suffer the same change with the calcareous shells associated with them.

Many of the sponges in these beds have been entire when entombed. Others are decayed and partially broken up, and there are some surfaces covered with confused patches of loose spicules arising from the disintegration of many specimens.

Some remarks are perhaps necessary here respecting the appearance of sponges in different states of preservation. Of course the original textures of sponges are different, and