transverse rods soldered together. In other cases there were four-rayed or six-rayed needles of silica, with their points attached so as to form a beautiful lattice-work, with its meshes either square or lozenge-shaped. For protection sharp needles were arranged like *chevaux de frize* at the sides and apertures, and these last were sometimes covered with a hood or grating of needles, to exclude intruders from the interior cavity. Other species, however, like some in the modern seas, seemed to despise these niceties, and contented themselves with long straight needles placed in bundles, or radiating from a centre, and thus supporting and protecting their soft and sensitive protoplasm.

Curiously enough, these old sponges did not avail themselves of the natural cystallization of silica, which, left to itself, would have formed six-rayed stars, with the rays at angles of sixty degrees, or six-sided plates, rods, or pyramids. They adopted another and peculiar form of the mineral, known as colloidal silica, and being thus relieved from any need to be guided by its crystalline form, treated it as we do glass, and shaped it into cylindrical tubes, round needles and stars or crosses, with the rays at right angles to each other.

The sponges whose skeletons are thus constructed, and which anticipated so many mechanical contrivances long afterwards devised by man, belonged to a group of silicious sponges (*Hexaclinellidæ*) which is still extant, and represented by many rare and beautiful species of the deep sea, which are the ornaments of our museums, and of which the beautiful *Eupleectella* or Venus flower-basket, from the Philippine Islands, and the glass-rope sponge (*Hyalonema*), from Japan, are examples. But contemporary with these there was another group (*Lithistidæ*), constructing skeletons of carbonate of lime, and which preferred, instead of the regular mechanical structures of the others, a kind of rustic work, made up of irregular fibres, very beautiful and strong, but as a matter of pattern and taste standing quite by itself. If there were any sponges with