granite, backed with concrete. This was completed by the end of 1866, and the tower now serves to warn the mariner against the "Cape of storms."

Moles and Breakwaters.

The use of moles and breakwaters to break the force of the waves and afford additional security to anchorage, dates from the earliest ages, and has been continued by every seafaring nation. It is impossible to do more here than just to refer to them. Among the most celebrated at home, and worthy of special mention for the lesson which it teaches of the value of consulting nature in such works, is the *Plymouth Breakwater.*

This work is 5100 feet long at the top, and 5310 long at low-water-line. The depth of water in which it is situated varies from 36 to 60 feet at low-water spring-tides. The tides rise from 12 to 18 feet. The lighthouse is on the west end. The work was commenced in 1812, and is mainly composed of vast masses of lime-stone thrown into the sea, *which has been allowed to form the outer slope.* In 1841, when the work was considered as completed, nearly 3,400,000 tons of stone had been used in it, and the cost had amounted to nearly 1½ millions sterling. A fort has recently been constructed in rear of the centre of the breakwater, which, with the works on either shore, defend the entrance into Plymouth.

Harbours, Docks, Quays, and Wharves.

My space absolutely forbids that I should enter into any detail regarding harbours, docks, quays, and wharves. They have necessarily occupied the attention of maritime nations in every era; and now, not only the ever-growing traffic of the world, but also the vastly-increased tonnage of the ships that bear that traffic call for fresh efforts. Nothing in engineering involves heavier expense or requires more sound judgment