a bed of oysters with such force, that great heaps of them were thrown *alive* upon the beach, and remained above high-water mark. I collected many of these oysters, as also the common eatable whelks (*Buccina*), thrown up with them, and observed that, although still living, their shells were worn by the long attrition of sand which had passed over them as they lay in their native bed, and which had evidently not resulted from the mere action of the tempest by which they were cast ashore.

From these facts we learn that the union of the two parts of a bivalve shell does not prove that it has not been transported to a distance; and when we find shells worn, and with all their prominent parts rubbed off, they may still have been imbedded where they grew.

Burrowing shells. — It sometimes appears extraordinary, when we observe the violence of the breakers on our coast, and see the strength of the current in removing cliffs, and sweeping out new channels, that many tender and fragile shells should inhabit the sea in the immediate vicinity of this turmoil. But a great number of the bivalve Testacea, and many also of the turbinated univalves, burrow in sand or mud. The Solen and the Cardium, for example, which are usually found in shallow water near the shore, pierce through a soft bottom without injury to their shells; and the Pholas can drill a cavity through mud of considerable hardness. The species of these and many other tribes can sink, when alarmed, with considerable rapidity, often to the depth of several feet, and can also penetrate upwards again to the surface, if a mass of matter be heaped upon them. The hurricane, therefore, may expend its fury in vain, and may sweep away even the upper part of banks of sand or mud, or may roll pebbles over them, and yet these Testacea may remain below secure and uninjured.

Shells become fossil at considerable depths. — I have already stated that, at the depth of 950 fathoms, between Gibraltar and Ceuta, Captain Smith found a gravelly bottom, with fragments of broken shells, carried thither probably from the comparatively shallow parts of the neighbouring straits, through which a powerful current flows. Beds of shelly sand might here in the course of ages be accumulated several thousand feet thick. But, without the aid of the drifting power of a current, shells may accumulate in the spot where they live and die, at great depths from the surface, if sediment be thrown down upon them; for even in our own colder latitudes, the depths at which living marine animals abound is very considerable. Captain Vidal ascertained, by soundings made off Tory Island, on the north-west coast of Ireland, that Crustacea, Star-fish, and Testacea, occurred at various depths between fifty and one hundred fathoms; and he drew up Dentalia from the mud of Galway Bay, in 230 and 240 *fathoms* water.

The same hydrographer discovered on the Rockhall Bank large quantities of shells at depths varying from 45 to 190 fathoms. These shells were for the most part pulverized, and evidently recent, as they