tion different from that which it had originally. In these cases the cavity at the apex of the spire is filled up with solid calcareous matter of a hardness not inferior to that of marble.

Such is the general form of turbinated shells. It sometimes happens, however, as in the *Conus*, that the upper surface of the spiral scarcely descends below the level of the original portion of the shell, which in the former disposition of its parts would have been the apex: while the lower portions of the spiral turns shoot downwards, so as to form a pointed process; thus, the whole is still a cone, but reversed from the former, the part last formed being the outer surface of the cone, and the circumference of the apparent base, or flat surface, of which the central part is the one first formed.

Various causes may occur to disturb the regularity of the process of deposition, by which the shell is enlarged in its dimensions; at one time accelerating, and at another retarding, or totally arresting its growth. These irregularities are productive of corresponding inequalities in the surface of the shell, such as transverse lines, or striæ. Whenever an exuberance of materials has led to a sudden expansion of growth, which has again soon subsided, a projecting ridge is produced in the direction of the margin of the mantle at the time this happens. This change generally recurs at regular periods, so that these ridges, or ribs, as they are often called, succeed one another at equal distances along the course of the spiral turns.

It not unfrequently happens that, at different periods, a sudden development takes place in particular parts of the mantle, which become in consequence rapidly enlarged, shooting out into long slender processes. Every part of the surface of these processes has the power of secreting and forming shell, so that the portion of shell they construct, being consolidated around each fleshy process, must necessarily have at first the shape of a tube closed at the extremity. As fresh deposites are made by the secreting surface, which are in the interior of the tube, the internal space is