surface of the external shell, there arise mechanical advantages for increasing its strength, founded on a principle that is practically applied in works of human art. The principle I allude to, is that by which the strength and stiffness of a thin metallic plate are much increased by corrugating, or applying *flutings* to its surface. A common pencil-case, if made of corrugated or fluted metal, is stronger than if the same quantity of metal were disposed in a simple tube. Culinary moulds of tin and copper are in the same way strengthened, by folds or flutings around their margin, or on their convex surfaces. The recent application of thin plates of *corrugated* iron to the purpose of making self-supporting roofs, in which the corrugations of the iron supply the place, and combine the power of beams and rafters, is founded on the same principle that strengthens the vaulted shells of Ammonites. In all these cases, the ribs or elevated portions, add to the plates of shell, or metal, the strength resulting from the convex form of an arch, without materially increasing their weight; whilst the intermediate depressed parts between these arches, are suspended and supported by the tenacity and strength of the material. (See Pl. 37, Figs. 1—10.*)

* The figures engraved at Pl. 37, afford examples of various contrivances to give strength and beauty to the external shell. The first and simplest mode, is that represented in Pl. 35 and