

depth must be found. The St. Gothard in Switzerland is the highest mountain I have as yet visited, but as I have not its exact altitude, I will take the one nearest to our shores, viz., Mount Canigou, which Mr Cassini, while tracing the Meridian of the Royal Observatory of Paris, which is carried through the entire length of France, found to be 1400 fathoms above the level of the sea. I have applied this rule to the depth where the bottom begins to descend rapidly, and also to a spot where Mount Canigou begins to rise, to form a section, wherein one may see at a glance the connection between these two points, equally distant from the greatest height of the mountain and the greatest depth of the sea.¹ This demonstration sufficiently proves, I think, that the unknown depth of the sea corresponds with the greatest height of the mountains on land, for it is easy to see that both are formed of superposed strata, lying at a certain ascending or descending angle."

Marsilli allowed himself to be carried away by his love of symmetry; he does not adduce one fact in support of his theory on the depths of the sea. But his work, which is interesting in more than one respect, deserves to be quoted, because it reflects the ideas of the time in which it was written, and also because the section he gives is the first attempt to graphically represent the relief of the globe. Marsilli held, along with the most able seamen whom he had consulted, that the greatest depth of the Mediterranean was abreast of the island of Malta. The seamen had also observed that when the shores are high and vertical the sea is very deep.

MARSILLI ON
MARINE DEPOSITS.

Marsilli makes a few observations on the knowledge then possessed concerning the nature of the bottom of the sea. He believes that the basin of the sea was excavated "at the time of the creation, out of the same stone which we see in the strata of the earth, with the same interstices of clay to bind them together."² He adds that we should not judge of the nature of the bottom by the materials which seamen bring up in their soundings. They dredge almost always on a muddy bottom, and very rarely on a rocky one, because the latter is covered with slime, sand, sandy, earthy, and calcareous concretions, and organic matter. These substances, he says, conceal the real bottom of the sea, and have been brought there by the action of the water; they always cover stony masses. "Lastly," he adds, "to explain myself briefly, I may compare the bed of the sea to a cask, which, having long held wine, seems from the inside to be made of dregs of tartar, though it is really of wood." In the profiles accompanying his work, he has marked with dotted lines the stony parts of the bottom; he distinguishes those which are covered with fine sand or with a sandy conglutination; the part covered with fine sand is always that exposed to the flow of rivers.

¹ The figure (Marsilli, *op. cit.*, pl. iii. p. 4, profiles or sections of the basin of the sea) shows the profile of Mount Canigou, the highest mountain in the Pyrenees, the height of which is 1400 fathoms, down to Cape Rose in Catalonia. It extends into the sea for a distance of 54 miles south-east, and at that point lies the abyss, which is as much below the surface of the sea as the mountain is above it.

² Marsilli, *op. cit.*, p. 14.