id difficile est, quam difficile montium per universam telluris superficiem diffusorum altitudines certa ratione inquirere; ut proinde illud huc quadrare videatur: altitudinem cœli, latitudinem Terræ, profunditatem maris quis mensus est?"[1]

VARENIUS' VIEWS ON THE DEPTH OF THE SEA.

Varenius[2] states that the depth of the sea may reach one German mile; at certain points the depth varies from $\frac{1}{80}$, $\frac{1}{20}$, $\frac{1}{10}$, $\frac{1}{4}$, to $\frac{1}{2}$ a mile. But, as in the case of Kircher, this opinion is not founded, with regard to great depths, on actual soundings. Varenius explains why the sea becomes shallower as the shore is approached, by saying that it is due to the concave form of the ocean basins. We have given Kircher's arguments against those who maintained that the bottom of the sea was a plain with few elevations, and those who professed that it was possible for man to determine the depth of the ocean. Varenius tries to show that the sea is not infinitely deep; the earth being a sphere, the radius cannot be infinite, nor, therefore, the depth of the sea. And, besides, the sea has a bottom; it does not extend from one point on the earth's surface to any other opposite point, for if the land were to be thus divided by the sea, it would, owing to its weight, immediately come together again. The observations made in the Mediterranean led Varenius to believe that some relation does exist between the height of the coast and the depth of that sea.

MARSILLI'S NOTIONS ON THE ABYSSES OF THE OCEAN.

Similar ideas as to the depth of the ocean were developed a century later by Marsilli in his Histoire physique de la Mer. Marsilli argues that the bottom of the Mediterranean in the Gulf of Lions is not only united with the shores, but forms a continuation of them; he rejects the opinion of the coral-fishers that those parts of the sea situated further from the shores, and called abysses, have no bottom. He says:[3]—"The fishermen, working on that slope where they are in the habit of finding coral at 150 and 200 fathoms, and their lines not allowing soundings in greater depths, imagine that the bottom cannot be found, and call it, in their exaggerated jargon, a bottomless abyss, impossible to be sounded. This idea, entertained by people of experience in marine matters, as well as by the simple fishers, appears to me absurd, and founded merely on the fact that nobody has yet cared to undertake the trouble and expense required for such soundings, which, according to all appearances, will never be made unless some prince orders for that purpose special vessels with suitable instruments. With regard to seamen, they never seek the bottom in deep waters. . . . . My various observations on the highest mountains of Europe, which I took with the barometer, induced me to seek the greatest depths of the sea, deeming that under the water, abysses of corresponding

[1] *Ibid*, p. 97. In the following chapter (cap. xv., De inæqualitate fundi maris cui jungitur Historia memorabilis supradicta confirmans, fol. 98, 99), Kircher confirms what he has just said on the irregularity of the sea-bottom by the history of the famous diver Pescecola, an authentic account of which was given him by the Secretary of the Royal Archives of Sicily. This account is almost as fabulous as that which we quoted from Mas'ūdī, on the foundation of Alexandria, and represents tolerably well the ideas then prevalent regarding the animals peopling the bottom of the sea, regarding the lower currents, and the form of the bottom.

[2] Varenius, *op. cit.*, p. 142.

[3] Histoire physique de la Mer, par L. F. Comte de Marsilli, traduit par H. Boerhaave, Amsterdam, 1725, p. 10.