his observations on the original character of these deposits, that the layers now found perpendicular, or inclined to the horizon, were horizontal at the time of their formation.

In 1740 Ant. Lazzaro Moro developed a system in which he attributes to frequently recurring submarine explosions the formation of mountains, plains, and islands. According to him the globe was primitively covered with water; on the third day of creation the crust which formed the bottom of the sea was raised. The mountains resulting from this upheaval are the primitive rocks, in which no fossils are found. At a later period there arose from the interior of the earth lava and other substances which accumulated on the bottom of the sea, and were upheaved in their turn through the same agency. With this second phenomenon were introduced diverse substances, such as salt, sulphur, and bitumen. As a natural consequence the water became salt, animals were developed in it, the earth became peopled about the same time, and the eruptions continuing produced an alternation of sedimentary and eruptive deposits.[1]

Arduino divided the Paduan, the Vicentin, and the Veronese mountains into primitive, secondary, and tertiary. The secondary mountains are for the most part formed of compact limestone in continuous strata, and contain petrified organised bodies. These strata vary in hardness, fineness of grain, composition, colour, and in the species of marine bodies they contain, since, according to him, there is but one kind in each stratum.[2]

Marsilli[3] makes a few observations on the bathymetric knowledge then possessed concerning the nature of the bottom of the sea; he admits 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." He adds that we should not judge of the nature of the bottom of the basins 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. These substances 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 which accompany his work, he has marked with dotted lines the stony parts of the bottom. In sea-bottoms of great extent, 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] De orostacei e degli altri marini corpi, che si trovano sui monti, Venice, 1740.

[2] Di varie minere di metalli e d'altre specie di fossili delle montane provincie Venetae, &c., *Mem. Soc. Ital.*, tom. iv. 1788.

[3] Histoire physique de la mer, par L. F. comte de Marsilli, traduit par Boerhaave, Amsterdam, 1725.