

The observations of Donati¹ on the bottom of the Adriatic led him to think that it is hardly different from the surface of the land, and is but a prolongation of the superposed strata in the neighbouring continent, the strata themselves being in the same order. They contain marble, stone, metals, and in some places sand, gravel, or clayey soil. He attributes to the nature of the sea-bottom the presence of certain substances in one place and their absence in another, and adds that he thinks this observation will explain why the earth has mountains and plains entirely destitute of marine bodies, whilst in other parts a great many are found, and why in some spots many varieties are found, and only one in others. Among the rocks formed in the Adriatic, Donati mentions marble, breccia, and calcareous tufa. The bottom of the Adriatic is covered with a layer formed by crustaceans, testaceans, and polyps, mixed with sand, and to a great extent petrified. This crust may be 7 to 8 feet deep, and he attributes to this deposit, bound together with the remains of organisms and sedimentary mineral matter, the rising of the bottom of the sea, and the encroachment of the water on the coasts.

In the great works of Wolfgang, Knorr, and Walet (1755–1773) we already find a distinction established between the fossil remains of pelagic animals and those of animals found on the sea-coast, and they express an opinion that the existing analogues of those that have not been found must exist in the deep seas as yet unexplored.

Beccari, towards 1729, created a new branch of conchology by the discovery of a small kind of polythalamous shell of nautiloid shape (*Nautilus beccarii*, Linn.). The coils of the helix and its transverse divisions give it a great resemblance to the ammonite—a term of comparison which was long adopted for all the other analogous Foraminifera, so plentiful in the marls of North Italy. Beccari counted more than 1500 in two ounces of this micaceous silico-calcareous sand.²

Ten years later G. Bianchi (better known by the name of J. Plancus) announced that he had found on the shore of Rimini the living analogue of the small fossil ammonite, and that its dimensions were such that it required 130 of them to equal the weight of a grain of wheat. He found a great many other species, which he still classed along with the nautilus and ammonite, on account of their internal divisions. His work³ contributed much to increase our knowledge on this subject, and at a later period he pointed out, within a mile of Sienna, a bed of microscopic shells analogous to those found on the shores of Rimini.

Later on Soldani examined the clay of the tufa and sands of North Italy, and produced his work on the nautili and ammonites of Tuscany,⁴ enriching science with a

¹ Essai sur l'histoire naturelle de la mer Adriatique, par le Dr. Vitaliano Donati, avec une lettre du Dr. L. Sesler, traduit de l'Italien, à la Haye, chez Pierre de Hondt, 1757, p. 6.

² Comm. Bonon., vol. i. p. 62.

³ De conchis minus notis in littore Ariminiensi, Venice, 1730.

⁴ Saggio oritografico ed osservazioni sopra le terre nautiliche ed ammonitiche di Toscana, with 25 plates, Sienna, 1780.