

SECT. II.—*Natural History.*

SUBSECT. 1.—*Geology.*

The geognosy of this country has, of late years, engaged the particular attention of naturalists; consequently, numerous new facts and views have been added to those formerly known. The writings of Dolomieu, Hamilton, Von Buch, Spallanzani, Brocchi, Breislac, Brongniart, Hausmann, Daubeny, Monticelli, Covelli, &c. are among the most interesting with which we are acquainted as illustrative of the mineral history of Italy and its islands, and to these we refer our readers. The following observations will convey a general idea of the geognostical structure and composition of this interesting country.

The geognostical structure of the central part of the Apennines is very simple; the mountains of that division of the range being composed of a white limestone which rarely contains foreign beds, and but seldom fossil organic remains. It is there, too, that the range is loftiest, and is also the broadest. But this simplicity of construction does not continue throughout the whole Apennine range; for, from the point where it rises from the Alps to the country of Florence, it is composed of strata and beds of slate, limestone, and a magnesian rock, named in Tuscany *gabbro* and *granitello*. The summits of the mountains of the country of Genoa, which overlook the Gulf of Spezzia, are principally formed of this latter substance, which is the *euphotide* of geologists. Some geologists consider this part of the range as of primitive formation; while others, as Professor Hausmann, view it as belonging to the transition class of rocks, because he finds it containing, intermingled with the rocks just mentioned, extensive deposits of greywacke. A limestone, resembling that of the Jura, forms all the mountains extending from Florence to Abruzzo, and from Abruzzo to Calabria. It is only in the latter province that the central part of the chain is formed of granite, gneiss, mica slate, and other primitive rocks; resting upon which, in the lower parts of the country, there are deposits of tertiary rocks.

The sub-Apennine hills belong to the tertiary series, and are composed of marls, slate clays, gravel, sands, and conglomerates. We observe also in these hills, but less frequently, gypsum, calcareous tuffas, and volcanic tuffas. A limestone of modern formation abounds in the neighbourhood of Rome, and is known under the name *travertino*, and of which the principal monuments of that city are built.

The Apennines are not rich in metals. The most considerable mines are those of *iron*, which occur in Tuscany, and chiefly in the island of Elba, a tract composed of primitive rocks. The *coal mines* in this chain are of but little importance, but there are great deposits of *salt* in the province of Cosenza. The principal mineral treasures of the Apennines are the *marbles*, of which the most celebrated are those of Carrara, Seravezza, and Siena.

Ancient volcanoes do not occur in the central part of the Apennines; all of them, with one exception, the hill of Volturno, near to the town of Melfi, in the province of Basilicata, are situated on the south-western declivity of the chain. They form an interrupted chain, which is passed over on the road from Siena to Rome. The most elevated spots of this district, such as the Monte Cimino near Viterbo, and the Monte Amiata, appear composed of trachyte. It is associated with basalt at Viterbo, where it is columnar, and rests on a bed of pumice and tuffa, containing the bones of quadrupeds. Near Viterbo is a small lake which is in a constant state of agitation, owing to the emission of sulphuretted hydrogen gas; and a little nearer, on the road to Rome, is the Lake of Vico, formerly the Lacus Cimino, which has all the appearance of a crater. The Lake of Bolsena, between Viterbo and Siena, possesses the shape of an ancient crater, and its being bounded by volcanic rocks is consistent with this opinion. The country around Rome, and also the hills on which the city is built, is composed of tertiary marls, clays, and sandstones, intermixed with a preponderating quantity of granular and lithoidal volcanic tuffas. The marls and sandstones are partly lacustrine, partly marine. The many lakes around Rome, such as those of Albano and Nemi, are formed by craters of ancient volcanoes. In the vicinity of Modena there are many small *mud volcanoes*, called *salses*, which throw out salt water. These volcanoes give out carbonated hydrogen, which, sometimes catching fire, gives rise to the *natural fires* mentioned by travellers, of which there are examples at Velleja, Pietra Mala, and Barigazza. On the road between Rome and Naples, the first indication of volcanic action, after passing the Pontine Marshes, occurs a little to the south-west of Mola de Gaeta. We there find ourselves between two chains of hills,—that to our right, the Monte Massico, composed of Jura limestone; the other, on the left, of volcanic marls. The town of Sessa stands on volcanic tuffa. Several *coulées*, or streams of lava, which seem connected with the volcanic hill of Rocca Monfina, also occur near Sessa. Rocca Monfina retains the vestiges of the great crater from whence these coulées flowed. A few miles west of the Mola de Gaeta lie the *Ponza Islands*, four of which are composed of trachyte; in the fifth, Giannone, the trachyte overlies limestone.

*Vesuvius*.—The only active volcano in Italy is Vesuvius, which shoots up in a country