

sils are those of marine animals. A bed of green marl, which may be very distinctly traced near the termination of the upper mass of gypsum, separates the fresh-water from the sea shells; and in the lower part of the gypsum formation, marine shells are found in the gypsum itself.

It may be useful to those strangers who visit Montmartre for the first time, to state, that this thin green bed, which can be distinctly seen and traced, may serve them as a key to the geology of the place; as it separates all the lower marine and fresh-water formations from the upper.

The gypsum of the Paris basin was probably deposited in an extensive lake, on the borders of which the land animals, whose remains are discovered in it, flourished and perished. Some of them appear to be formed for swimming, or living much in the water, like the otter or water rat. Whether the water in this lake was salt or fresh, is by no means certain; though M. Brongniart thinks that a single fresh-water shell found in the gypsum would decide the question: but this opinion, however high the authority of so distinguished a naturalist and geologist may be, cannot, I conceive, be maintained; for, in some of the beds, we meet with a mixture of marine and freshwater shells,—and in this case who shall determine, whether such beds are of marine or freshwater origin? The intermixture of shells clearly shows, that they have been transported from their native situations, or if the water be brackish, that marine and freshwater mollusca may live in the same estuary or lake, which is confirmed by recent observations and experiments.

The fossil bones found in the gypsum quarries near Paris are light and porous, and appear to have been scarcely penetrated by gypsum: this is very remarkable; for if we suppose the gypsum to have been held in solution by water, like the sulphate of lime in recent springs, it seems extraordinary that it should not have penetrated into the pores of the bones. I am not aware that the circumstance has before been noticed by geologists, but I think the state of the bones proves, that they were rapidly enveloped by the gypsum, before the animal matter in the pores was decomposed; and also, that the gypsum was speedily consolidated. The same observation would apply to the bones of land animals which I found in the freshwater limestone, under the volcanic mountain of Gergovia, in Auvergne; the state of these bones was similar to those in the Paris gypsum.

Baron Cuvier was the first naturalist who successfully applied the knowledge of comparative anatomy, to ascertain the forms of vertebrated fossil animals. The publication of his *Recherches sur les Ossemens Fossiles* may be regarded as an epoch in geology: since that time, many other important discoveries respecting fossil quadrupeds, have been made. It will not, therefore, be deemed irrelevant to our subject, to insert the very interesting account he has given of his own feelings when he first became able to arrange the bones of each ge-