

Hence it is conceivable that even those cones which have the freshest aspect, and most perfect shape, may lay claim to very high antiquity. Dr. Daubeny has justly observed, that had any of these volcanos been in a state of activity in the age of Julius Cæsar, that general, who encamped upon the plains of Auvergne, and laid siege to its principal city (Gergovia, near Clermont), could hardly have failed to notice them. Had there been any record of their eruptions in the time of Pliny or Silius Italicus, the one would scarcely have omitted to make mention of it in his Natural History, nor the other to introduce some allusion to it among the descriptions of this his native province. This poet's residence was on the borders of the Lake Aude, which owed its very existence to the damming up of a river by one of the most modern lava-currents.\*

*Velay.*—The observations of M. Bertrand de Douc have not yet established that any of the most ancient volcanos of Velay were in action during the Eocene period. There are beds of gravel in Velay, as in Auvergne, covered by lava at different heights above the channel of the existing rivers. In the highest and most ancient of these alluviums the pebbles are exclusively of granitic rocks; but in the newer, which are found at lower levels, and which originated when the valleys had been cut to a greater depth, an intermixture of volcanic rocks has been observed.

At St. Privat d'Allier a bed of volcanic scorice and tuff was discovered by Dr. Hibbert, inclosed between two sheets of basaltic lava; and in this tuff were found the bones of several quadrupeds, some of them adhering to masses of slaggy lava. Among other animals were *Rhinoceros leptorhinus*, *Hyæna spelæa*, and a species allied to the spotted hyæna of the Cape, together with four undetermined species of deer. The manner of the occurrence of these bones reminds us of the published accounts of an eruption of Coseguina, 1835, in Central America (see p. 521), during which hot cinders and scorice fell and scorched to death great numbers of wild and domestic animals and birds.

*Plomb du Cantal.*—In regard to the age of the igneous rocks of the Cantal, we can at present merely affirm, that they overlie the (Upper ?) Eocene lacustrine strata of that country (see Map, p. 195). They form a great dome-shaped mass, having an average slope of only  $4^{\circ}$ , which has evidently been accumulated, like the cone of Etna, during a long series of eruptions. It is composed of trachytic, phonolitic, and basaltic lavas, tuffs, and conglomerates, or breccias, forming a mountain several thousand feet in height. Dikes also of phonolite, trachyte, and basalt are numerous, especially in the neighbourhood of the large cavity, probably once a crater, around which the loftiest summits of the Cantal are ranged circularly, few of them, except the Plomb du Cantal, rising far above the border or ridge of this supposed crater. A pyramidal hill, called the Puy Griou, occupies the middle of the cavity.† It is clear that the volcano of the Cantal broke out precisely on the site of the

\* Daubeny on Volcanos, p. 14.

† Mém. de la Soc. Géol. de France, tom. i. p. 175.