

The country where they occur is almost entirely composed of granite and different varieties of granitic schist, with here and there a few patches of secondary strata, much dislocated, and which have probably suffered great denudation. There are also some vast piles of volcanic matter (see the map), the greater part of which is newer than the fresh-water strata, and is sometimes seen to rest upon them, while a small part has evidently been of contemporaneous origin. Of these igneous rocks I shall treat more particularly in another part of this work.

Before entering upon any details, I may observe, that the study of these regions possesses a peculiar interest, very distinct in kind from that derivable from the investigation either of the Parisian or English tertiary areas. For we are presented in Auvergne with the evidence of a series of events of astonishing magnitude and grandeur, by which the original form and features of the country have been greatly changed, yet never so far obliterated but that they may still, in part at least, be restored in imagination. Great lakes have disappeared,—lofty mountains have been formed, by the reiterated emission of lava, preceded and followed by showers of sand and scorix,—deep valleys have been subsequently furrowed out through masses of lacustrine and volcanic origin,—at a still later date, new cones have been thrown up in these valleys,—new lakes have been formed by the damming up of rivers,—and more than one creation of quadrupeds, birds, and plants, Eocene, Miocene, and Pliocene, have followed in succession; yet the region has preserved from first to last its geographical identity; and we can still recall to our thoughts its external condition and physical structure before these wonderful vicissitudes began, or while a part only of the whole had been completed. There was first a period when the spacious lakes, of which we still may trace the boundaries, lay at the foot of mountains of moderate elevation, unbroken by the bold peaks and precipices of Mont Dor, and unadorned by the picturesque outline of the Puy de Dome, or of the volcanic cones and craters now covering the granitic platform. During this earlier scene of repose deltas were slowly formed; beds of marl and sand, several hundred feet thick, deposited; siliceous and calcareous rocks precipitated from the waters of mineral springs; shells and insects imbedded, together with the remains of the crocodile and tortoise, the eggs and bones of water birds, and the skeletons of quadrupeds, some of them belonging to the same genera as those entombed in the Eocene gypsum of Paris. To this tranquil condition of the surface succeeded the era of volcanic eruptions, when the lakes were drained, and when the fertility of the mountainous district was probably enhanced by the igneous matter ejected from below, and poured down upon the more sterile granite. During these eruptions, which appear to have taken place after the disappearance of the upper Eocene fauna, and partly in the Miocene epoch, the mastodon, rhinoceros, elephant, tapir, hippopotamus, together with the ox, various kinds of deer, the bear, hyæna, and many beasts of prey, ranged the forest, or pastured on the plain, and were occasionally overtaken by a fall of burning cinders, or buried in