

evident that the bed of the lake has retained its original height, a supposition no ways improbable.

On this bank, called *Le Travers*, which is in great part covered with sand and pebbles, stands, near the Pagnis, a huge granitic stone, universally known to the Genevese by the appellation of *Pierre-à-Nitton*, being a corruption of the word *Neptune*;—it being a received opinion among them that on this stone originally stood an altar dedicated to that god.

This block of granite, as well as many others of similar kind, found on the hills which screen the basis of the Jura, the Vouaches, and the Salève, to an elevation of five hundred feet at least, merit attention, and must be deemed curious, being visibly foreign to the places where they now stand, and cannot possibly have come from any part, except the highest primordial peaks of the Alps. Similar pieces have I likewise remarked, as well as lamellated hornstone and primitive rock, in several places on the banks of the lake, and on the road from Geneva to Evian. Now, as to the manner in which they may have been conveyed to those places, the force which has acted on them; or rather by what convulsion or operation of Nature they may have been thrown there, are questions difficult to resolve; yet I shall hereafter venture to hazard my opinion on this subject.

But to return to Geneva.—Considering this city as seated at the extremity of this noble lake, and on the declivity of two hills, separated only by the course of the Rhône, which, on breaking out of the lake, flows through the city nearly from east to west, in a smooth, deep, and transparent stream, it may be said not only to command one of the most pleasing and well-cultivated countries it is possible to conceive, but in fact to become, from whatever point it is viewed, an interesting object. (*Vide* N° XIII.)

Contiguous to a deep ravine, near the hills Labatie and St. Jean, at the eastern part of the city, the polluted Arve, which takes its source among the glaciers of Fancignie, mingles, with great rapidity, its muddy waters with those of the Rhône. The swelling of this river, at the melting of the snow, becomes so considerable, that it overflows its banks, and inundates the surrounding fields and gardens. Its impetuosity is then so rapid, that, not finding scope proportionate to its bulk and velocity in the deep narrow channel dug by its water, in conjunction with that of the Rhône, it has frequently been known to cause a retrograde motion in the latter, forcing it to return again into the lake. Even when I was last at Geneva, several people recollected the mills working

by a contrary motion from the above circumstance; though the 14th of September, 1733, is supposed to have been the last time this singular event was noticed. Since that time, the Rhône, although now and then impeded, or in some degree stopped, by the velocity of the Arve, has not been observed to retrograde.

St. Jean's Hill, on which is built that part of the town denominated St. Gervais, as also the one on which stands St. Pierre, which is a continuation of those of Coligny, as well as Labatie, on the left of the Arve, including those along the banks of the Rhône in the neighbourhood of Geneva,—all these, in general, gradually rise towards the high calcareous mountains which screen the great valley of Lake Lemman, and appear to show, by their respective height, the original elevation which the bed of the lake had, in all probability, when the water, according to every appearance, extended from the Salève to the Jura, but was restrained on the south-west side by the Vouaches and Mount Sion, mountains situated between the two former.

Admitting this hypothesis, may we not be led to suppose, that the valleys and ravines which are in the vicinity of Geneva between the above-mentioned hills, which serve as a bed to the Rhône and the Arve, have likewise been the work of some great and rapid current, which probably existed at the time when a sudden or violent convulsion of Nature affected the Jura contiguous to the defile of Cluse? This, likewise, by severing that mountain, not only formed the Vouaches, but at once opened the defile into which the waters of the lake precipitated, and, in process of time, furrowed by their extreme impetuosity, in a direction analogous to their course, the bottom of the channel, stretching out at first, and afterwards imperceptibly finishing, at their last retreat, the hills and ravines such as they now appear, which are still gradually decreasing, as is evident by the various observations made on the spot by men of the greatest abilities. Among these, monsieur Senebier, librarian to the republic, well known for his extensive knowledge, gives it as his opinion, that for eight or ten centuries the waters of the lake have insensibly decreased.

By way of corroborating the preceding ideas, historical and geological proofs may be brought to show, that the Rues-basses, Plein Palais, Carrouge, and Près l'Evêque, were originally submerged by the waters of the lake. In the first place, the great analogy that exists between the beds or strata of the Jura and those of the Vouaches, both as to structure, direction, and composition. 2dly, The direction of the hills, which are all nearly parallel to the Jura and Salève, inclining, with little variation, towards the defile

of Cluse. 3dly, The composition or structure of the same hills, the strata of which are almost invariably parallel to the horizon, corresponding both as to matter and thickness; which are all, as I have before noticed, formed of sand, pebbles, argillaceous earth, a species of pudding-stone incrustated in a calcareous cement, and a soft kind of sandstone, or *mollasse*, which hardens in the air, but without fossils; although, in the calcareous mountains that screen the extremity of the lake, vast quantities of different species are found imbedded. 4thly, The structure and form of Mount Sion (a mountain situate between the Vouaches and Salève). This is formed of sand, pebbles, and sandstone,—a proof that it has served, at some remote period, as a boundary to the lake at its southern extremity, which, from every appearance, has even been likewise anciently submerged. This conjecture, likewise, may probably not appear entirely unfounded, to persons who have carefully bestowed some attention on the structure of the Salève, whose direction tends nearly from north-east to south-west, about a mile and a half distant from Geneva; but whose abrupt sides, towards the city, exhibit large naked strata, torn and chamfreted almost horizontally. This circumstance seems to have been effected by the different currents that existed in that part of the Alps, when the sea universally prevailed over the secondary mountains.

Having thus far concluded my description of Geneva and its surrounding country, I shall now merely subjoin the names of the most curious plants found on the hills contiguous to the city; at the same time acquainting the lovers of ichthyology and ornithology, that both within and without the lake they may meet with objects deserving attention: among which the *colymbus cristatus* of Linnæus is particularly beautiful, and its feathers, of a silvery white, yield a down of great value,—the *colymbus iners*—the *colymbus arcticus*—the *tantulus falcinellus*—the *tringa hypoleucos*,—besides an astonishing variety of wild ducks. As for the botanist, he may soon enrich his collection with a number of curious plants; for the *erythronium dens canis*—the *centaurea solstitialis*—the *anemone renunculoides*—the *cucubalus bacciferus*—the *geranium sanguineum*—the *plantago coronopus*, and many others, too tedious to enumerate, are in vast profusion; most of which are likewise indigenous in the South of France. Nor must I omit, previous to my leaving this charming country, to inform the lithologist, that this spot to him must likewise become a place of peculiar research, on account of the rich and valuable specimens of productions from the Alps, found on the banks of the lake and the beds of the rivers.