sands of well-preserved organic bodies, which abound in every minute grain of chalk, and are especially apparent in the white coating of flints, often accompanied by innumerable needle-shaped spiculæ of sponges. After reflecting on these discoveries, we are naturally led on to conjecture that, as the formless cement in the semi-opal of Bilin has been derived from the decomposition of animal and vegetable remains, so also many chalk flints in which no organic structure can be recognized may nevertheless have constituted a part of microscopic animalcules.

"The dust we tread upon was once alive!"—BYRON.

How faint an idea does this exclamation of the poet convey of the real wonders of nature! for here we discover proofs that the calcareous and siliceous dust of which hills are composed has not only been once alive, but almost every particle, albeit invisible to the naked eye, still retains the organic structure which, at periods of time incalculably remote, was impressed upon it by the powers of life.

Freshwater and marine fossils.—Strata, whether deposited in salt or fresh water, have the same forms; but the imbedded fossils are very different in the two cases, because the aquatic animals which frequent lakes and rivers are distinct from those inhabiting the sea. In the northern part of the Isle of Wight formations of marl and limestone, more than 50 feet thick, occur, in which the shells are principally, if not all, of extinct species. Yet we recognize their freshwater origin, because they are of the same genera as those now abounding in ponds and lakes, either in our own country or in warmer latitudes.

In many parts of France, as in Auvergne, for example, strata of limestone, marl, and sandstone are found, hundreds of feet thick, which contain exclusively freshwater and land shells, together with the remains of terrestrial quadrupeds. The number of land shells scattered through some of these freshwater deposits is exceedingly great; and there are districts in Germany where the rocks scarcely contain any other fossils except snail-shells (*helices*); as, for instance, the limestone on the left bank of the Rhine, between Mayence and Worms, at Oppenheim, Findheim, Budenheim, and other places. In order to account for this phenomenon, the geologist has only to examine the small deltas of torrents which enter the Swiss lakes when the waters are low, such as the newly-formed plain where the Kander enters the Lake of Thun. He there sees sand and mud strewed over with innumerable dead land shells, which have been brought down from valleys in the Alps in the preceding spring, during the melting of the snows. Again, if we search the sands on the borders of the Rhine, in the lower part of its course, we find countless land shells mixed with others of species belonging to lakes, stagnant pools, and marshes. These individuals have been washed away from the alluvial plains of the great river and its tributaries, some from mountainous regions, others from the low country.