

furnishes of the progressive formation of the different rocks and mineral masses of which the earth is composed—the description and restoration of the several species of animals and vegetables which have existed, have died and become extinct, and which form, in the language of naturalists, the *Fauna* and *Flora* of the ancient world.

In order to explain the origin of the earth, and the cause of its various revolutions, modern geologists invoke three orders of facts, or fundamental considerations:—

I. The hypothesis of the original incandescence of the globe.

II. The consideration of fossils.

III. The successive deposition of the sedimentary rocks.

As a corollary to these, the hypothesis of the upheaval of the earth's crust follows—upheavals having produced local revolutions. The result of these upheavals has been to superimpose new materials upon the older rocks, introducing extraneous rocks called *Eruptive*, beneath, upon, and amongst preceding deposits, in such a manner as to change their nature in divers ways. Whence is derived a third class of rocks called *Metamorphic* or altered *rocks*, our knowledge of which is of comparatively recent date.

FOSSILS.

The name of *Fossil* (from *fossilis*, dug up) is given to all organised bodies, animal or vegetable, buried naturally in the terrestrial strata, and more or less petrified, that is, converted into stone. Fossils of the older formations are remains of organisms which, so far as species is concerned, are quite extinct; and only those of recent formations belong to genera living in our days. These fossil remains have neither the beauty nor the elegance of most living species, being mutilated, discoloured, and often almost shapeless; they are, therefore, interesting only in the eyes of the observer who would interrogate them, and who seeks to reconstruct, with their assistance, the *Fauna* and *Flora* of past ages. Nevertheless, the light they throw upon the past history of the earth is of the most satisfactory description, and the science of fossils, or palæontology, is now an important branch of geological inquiry. Fossil shells, in the more recent deposits, are found scarcely altered; in some cases only an impression of the external form is left—sometimes an entire cast of the shell, exterior and interior. In other cases the shell has left a perfect impression of its form in the surrounding mud, and has then been dissolved and washed away, leaving only its mould. This mould, again, has sometimes been filled up by calcareous spar, silica, or