

## CHAPTER V.

### PALÆONTOLOGY.

AFTER William Smith, Alexandre Brongniart, and Cuvier had disclosed to geologists the significance that attached to fossils as organic relics characteristic of successive geological epochs, some of the most enlightened scientific men of the day shared the increased interest in the study of fossils, and, greatly to the advantage of this branch of research, directed their genius to the examination, identification, and classification of fossils in the light of comparison with the existing plant and animal world. Blumenbach, Cuvier, Lamarck, Schlotheim, and others applied the scientific methods of Zoology, Comparative Anatomy, and Botany to the investigation of the remains of fossil organisms. A knowledge of fossil remains was no longer viewed as the hobby of a few dilettantes, but at the chief seats of learning was elevated to the rank of an independent mental discipline in the scientific curriculum. The new science was given the name of "Palæontology" almost simultaneously by two eminent authors, Ducrotay de Blainville and Fischer von Waldheim (1834), and the name was rapidly adopted in France and England, although in Germany the older terms "Petrefaktenkunde" and "Petrefaktologie" held their place for many decades.

Two directions were from the first apparent in palæontological research—a stratigraphical and a biological. Stratigraphers wished from palæontology mainly confirmation regarding the true order or relative age of zones of rock deposits in the field. Biologists had, theoretically at least, the more genuine interest in fossil organisms as individual forms of life; for the biologist or student of existing life the supreme value of palæontology was the evidence it might bring towards the solution of the problems of the genesis and evolution of living forms, determination of species and genera, variation of types in its relation to climatic conditions, distribution of types in respect of