

I N T R O D U C T I O N .

GEOLOGICAL researches into the structure of the globe show that a succession of physical changes have modified its surface from the earliest period up to the present time, and that these changes have been accompanied with variations not only in the phases of animal and vegetable life, but often in the development also of organization; and as these changes cannot be supposed to have been operating uniformly over the entire surface of the globe in the same periods of time, we should naturally be prepared for finding the now existing fauna of some regions exhibiting a higher state of development than that of others; accordingly, if we contrast the fauna of the old continents of geographers with the zoology of Australia and New Zealand, we find a wide difference in the degree of organization which creation has reached in these respective regions. In New Zealand, with the exception of a *Vespertilio* and a *Mus*, which latter is said to exist there, but which has not yet been sent to this country, the most highly organized animal hitherto discovered, either fossil or recent, is a bird; in Australia, if compared with New Zealand, creation appears to have considerably advanced, but even here the order *Rodentia* is the highest in the scale of its indigenous animal productions; the great majority of its quadrupeds being the MARSUPIATA (Kangaroos, &c.) and the MONOTREMATA (*Echidna* and *Ornithorhynchus*), which are the very lowest of the Mammalia; and its ornithology being characterized by the presence of certain peculiar genera, *Talegalla*, *Leipoa* and *Megapodius*; birds which do not incubate their own eggs, and which are perhaps the lowest representatives of their class, while the low organization of its botany is indicated by the remarkable absence of fruit-bearing trees, the *Cerealia*, &c.

My investigation of the natural productions of Australia induces me to believe, that at some remote period that country was divided into at least two portions, since, with a few exceptions, I find the species inhabiting the same latitudes of its eastern and western divisions differing from, but representing each other. Some writers, Captain Sturt and Mr. Jukes, *e. g.* are of opinion that its subdivision was even greater, and that the sandy deserts now met with in the interior were formerly the beds of the seas that flowed between the archipelago of islands of which they suppose it to have been composed. In a valuable paper by Mr. Jukes, entitled 'Notes on the Geology of the Coasts of Australia,' read at the meeting of the Geological Society on the 17th of November 1847, that gentleman stated, that "The eastern coast is occupied by a great range of high land, appearing like a continuous chain of mountains when seen from the sea, and rising in several places to 5000 feet or more above the sea-level. This chain has an axis of granite, with occasional