

favor of their mutability; on the contrary, every modern investigation<sup>1</sup> has only gone to confirm the results first obtained by Cuvier, and his views that species are fixed.

It is something to be able to show by monumental evidence, and by direct comparison, that animals and plants have undergone no change for a period of about five thousand years.<sup>2</sup> This result has had the greatest influence upon the progress of science, especially with reference to the consequences to be drawn from the occurrence in the series of geological formations of organized beings as highly diversified in each epoch as those of the present day;<sup>3</sup> it has laid the foundation for the conviction, now universal among well informed naturalists, that this globe has been in existence for innumerable ages, and that the length of time elapsed since it first became inhabited cannot be counted in years. Even the length of the period to which we belong is still a problem, notwithstanding the precision with which certain systems of chronology would fix the creation of man.<sup>4</sup> There are, however, many circumstances which show that the animals now living have been for a much longer period inhabitants of our globe than is generally supposed. It has been possible to trace the formation and growth of our coral reefs, especially in Florida,<sup>5</sup> with sufficient precision to ascertain that it must take about eight thousand years for one of those coral walls to rise from its foundation to the level of the surface of the ocean. There are, around the southernmost extremity of Florida alone, four such reefs concentric with one another, which can be shown to have grown up, one after the other. This gives for the beginning of the first of these reefs an age of over thirty thousand years; and yet the corals by which they were all built up are the same identical species in all of them. These facts, then, furnish as direct evidence as we can obtain in any branch of physical inquiry, that some, at least, of the species of animals now existing, have been in existence over thirty thousand years, and have not undergone the slightest change during the whole of that period.<sup>6</sup> And yet these

<sup>1</sup> RUTIN, Recherches sur les plantes trouvées dans les tombeaux égyptiens, Ann. des scien. nat., vol. viii., 1826, p. 411.

<sup>2</sup> It is not for me to discuss the degree of reliability of the Egyptian chronology; but as far as it goes, it shows that from the oldest periods ascertained, animals have been what they are now.

<sup>3</sup> See my paper upon The Primitive Diversity, etc., quoted above, p. 25.

<sup>4</sup> NOTT & GLIDDON, Types of Mankind, p. 653.

<sup>5</sup> See my paper upon the Reefs of Florida, soon to be published in the Reports of the United States

Const Survey, extracts of which are already printed in the Report for 1851, p. 145.

<sup>6</sup> Those who feel inclined to ascribe the differences which exist between species of different geological periods to the modifying influence of physical agents, and who look to the changes now going on among the living for the support of such an opinion, and may not be satisfied that the facts just mentioned are sufficient to prove the immutability of species, but may still believe that a longer period of time would yet do what thirty thousand years have not done, I beg leave to refer, for further con-