CHAPTER II.

The Length of the Day.

We shall now consider another astronomical element, the time of the revolution of the earth on its axis; and we shall find here also that the structure of organized bodies are suited to this element;—that the cosmical and physiological arrangements are adapted to each other.

We can very easily conceive the earth to revolve on her axis faster or slower than she does, and thus the days to be longer or shorter than they are, without supposing any other change to take place. There is no apparent reason why this globe should turn on its axis just three hundred and sixty-six times while it describes its orbit round the sun. The revolutions of the other planets, so far as we know them, do not appear to follow any rule by which they are connected with the distance from the sun. Mercury, Venus, and Mars have days nearly the length of ours. Jupiter and Saturn revolve in about ten hours each. For any thing we can discover, the earth might have revolved in this or any other smaller period; or we might have had, without mechanical inconvenience, much longer days than we have.

But the terrestrial day, and consequently the length of the cycle of light and darkness, being what it is, we find various parts of the constitution both of animals and vegetables, which have a periodical character in their functions, corresponding to the diurnal succession of external conditions; and we find that the length of the period, as it exists in their constitution, coincides with the length of the natural day.

The alternation of processes which takes place in plants by day and by night is less obvious, and less