

all the great philosophers of nature who first established a theory of organic development, and who are the illustrious fellow-workers of Darwin. I turn first to the incomparable Goethe, who, above all, stands closest to us Germans. However, before I explain his special services to the theory of development, it seems to me necessary to say a few words about his importance as a naturalist in general, as it is commonly very little known.

I am sure most of my readers honour Goethe only as a poet and a man; only a few have any conception of the high value of his scientific works, and of the gigantic stride with which he advanced before his own age—advanced so much that most naturalists of that time were unable to follow him. In several passages of his scientific writings he bitterly complains of the narrow-mindedness of professed naturalists, who did not know how to value his works (who could not see the forest for the trees), and who could not rouse themselves to discover the general laws of nature among the mass of details. He is only too just when he utters the reproach—"Philosophers will very soon discover that observers rarely rise to a standpoint from which they can survey so many important objects." It is true, at the same time, that their want of appreciation was caused by the false road into which Goethe was led in his theory of colours.

This theory of colours, which he himself designates as the favourite production of his leisure, however much that is beautiful it may contain, is a complete failure in regard to its foundations. The exact mathematical method by means of which alone it is possible, in inorganic sciences, but above all in physics, to raise a structure step by step