present chapter will deal with the morphological, the following with the genetic, views of nature.[1]

Were the real world only one out of many possible worlds which the mathematical mind can imagine, though through its complication and intricacy it might still far surpass its powers of analysis; were the actual forms of nature only some of the infinitely possible states of equilibrium, the events and changes surrounding us in space and time only a few of the countless combinations of motion taught in dynamics; were the actual course of things—as mathematicians since Laplace have fancifully put it—only one particular solution of the general differential equations of the world-motion,—then the two great domains of morphology and genesis would exhaust the subject and satisfy all the interests by which natural history has been created. Unfortunately for the pure mathematician, but fortunately for the rest of mankind, notably the poet and the artist, it is not so. An enormous gulf separates the creations of nature from the most perfect machine; and the fact that, with all the most delicate methods at her command, her most perfect machines, like the human eye, do not come up to the demands of the optician,[2] shows us that other agencies

15. Other aspects.

[1] As in abstract mechanics, the study of the conditions of equilibrium, *i.e.*, statics, preceded in time the study of the phenomena of motion, *i.e.*, dynamics, so in the study of nature the apparently finished or developed forms attracted attention before their genesis was inquired into; and as the key to statics has in the course of time been discovered to lie in dynamics, so the key to an understanding of form and structure has been found to lie in the dynamical theory of descent or evolution. In animal biology a separate influence—the medical interest—led, however, very early to a study of function and of the processes in the living organism.

[2] This refers to a well-known remark of Helmholtz in his popular lectures on the 'Theory of Light' (1868), where he enlarges on the remarkable imperfections of the eye as an optical instrument. His real