

## PART I.

### THE MECHANICAL FUNCTIONS.

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#### CHAPTER I.

##### ORGANIC MECHANISM.

###### § 1. *Organization in General.*

LIFE, which consists of a continued series of actions, directed to particular purposes, cannot be carried on but by the instrumentality of those peculiar and elaborate structures and combinations of material particles which constitute *organization*. All these arrangements, both as respects the mechanical configuration and the chemical constitution of the elements of which the organized body is composed, even when apparently most simple, are, in reality, complex and artificial in the highest possible degree. Let us take as a specimen the crystalline lens, or hard central part, of the eye of a codfish, which is a perfectly transparent, and to all appearance homogeneous, spherule. No one, unaccustomed to explore the wonders of nature, would suspect that so simple a body, which he might suppose to be formed of a uniform material cast in a mould, would disclose, when examined under a powerful microscope, and with the skill of a Brewster, the most refined and exquisite conformation. Yet, as I shall have occasion to specify more in detail in its