

anatomizers of plants and animals, in order to investigate their structure, and to obtain an insight into the grounds why and to what end such parts, why such a situation and connexion of the parts, and exactly such an internal form, come before them, assume, as indispensably necessary, this maxim, that in such a creature nothing is *in vain*, and proceed upon it in the same way in which in general natural philosophy we proceed upon the principle that *nothing happens by chance*. In fact, they can as little free themselves from this *teleological* principle as from the general physical one; for as, on omitting the latter, no experience would be possible, so on omitting the former principle, no clue could exist for the observation of a kind of natural objects which can be considered teleologically under the conception of natural ends.”

Even if the reader should not follow the reasoning of this celebrated philosopher, he will still have no difficulty in seeing that he asserts, in the most distinct manner, that which is denied by the author whom we have before quoted, the propriety and necessity of assuming the existence of an end as our guide in the study of animal organization.

4. It appears to me, therefore, that whether we judge from the arguments, the results, the practice of physiologists, their speculative opinions, or those of the philosophers of a wider field, we are led to the same conviction, that in the organized world we may and must adopt the belief, that organization exists for its purpose, and that the apprehension of the purpose may guide us in seeing the meaning of the organization. And I now proceed to show how this principle has been brought into additional clearness and use by Cuvier.

In doing this, I may, perhaps, be allowed to make a reflection of a kind somewhat different from the preceding remarks, though suggested by them. In another work,<sup>18</sup> I endeavored to show that those who have been discoverers in science have generally had minds, the disposition of which was to believe in an intelligent Maker of the universe; and that the scientific speculations which produced an opposite tendency, were generally those which, though they might deal familiarly with known physical truths, and conjecture boldly with regard to the unknown, did not add to the number of solid generalizations. In order to judge whether this remark is distinctly applicable in the case now considered, I should have to estimate Cuvier in comparison with other physiologists of his time, which I do not presume to do. But I may

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<sup>18</sup> *Bridgewater Treatise*, B. iii. c. vii. and viii. On Inductive Habits of Thought, and on Deductive Habits of Thought.