

self made a large advance with it ; and it was because he was so poised by the vast mass of his knowledge, so temperate in his love of doubtful generalizations, that he was not swept on in the wilder part of the stream. To such a charge, moderate reformers, who appreciate the value of the good which exists, though they try to make it better, and who know the knowledge, thoughtfulness, and caution, which are needful in such a task, are naturally exposed. For us, who can only decide on such a subject by the general analogies of the history of science, it may suffice to say, that it appears doubtful whether the fundamental conceptions of affinity, analogy, transition, and developement, have yet been fixed in the minds of physiologists with sufficient firmness and clearness, or unfolded with sufficient consistency and generality, to make it likely that any great additional step of this kind can for some time be made.

We have here considered the doctrine of the identity of the seemingly various types of animal structure, as an attempt to extend the correspondencies which were the basis of Cuvier's division of the animal kingdom. But this doctrine has been put forward in another point of view, as the antithesis to the doctrine of final causes. This question is so important a one, that we cannot help attempting to give some view of its state and bearings.

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## CHAPTER VIII.

### THE DOCTRINE OF FINAL CAUSES IN PHYSIOLOGY.

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#### *Sect. 1.—Assertion of the Principle of Unity of Plan.*

WE have repeatedly seen, in the course of our historical view of Physiology, that those who have studied the structure of animals and plants, have had a conviction forced upon them, that the organs are constructed and combined in subservience to the life and functions of the whole. The parts have a *purpose*, as well as a *law* ;—we can trace Final Causes, as well as Laws of Causation. This principle is peculiar to physiology ; and it might naturally be expected that, in the progress of the science, it would come under special consideration. This accordingly has happened ; and the principle has been drawn