

only by long-enduring transmission, by inheritance of acquired adaptations of the brain, out of originally empiric or experiential "knowledge à posteriori" (vol. i. p. 31).

The objections to the Theory of Descent here discussed and refuted are, I believe, the most important which have been raised against it; I consider also that I have sufficiently proved to the reader their futility. The numerous other objections which besides these have been raised against the Theory of Development in general, or against its biological part, the Theory of Descent in particular, arise either from such a degree of ignorance of empirically established facts, or from such a want of their right understanding, and from such an incapacity to draw the necessary conclusions, that it is really not worth the trouble to go further into the refutation. There are only some general points in regard to which, I should like, in a few words, to draw attention.

In the first place I must observe, that in order thoroughly to understand the doctrine of descent, and to be convinced of its absolute truth, it is indispensable to possess a general knowledge of the whole of the domain of biological phenomena. *The theory of descent is a biological theory*, and hence it may with fairness and justice be demanded that those persons who wish to pass a valid judgment upon it should possess the requisite degree of biological knowledge. Their possessing a special empiric knowledge of this or that domain of zoology or botany, is not sufficient; they must possess a *general insight into the whole series of phenomena*, at least in the case of one of the three organic kingdoms. They ought to know what universal laws result from the comparative morphology and physiology of organisms, but more especially from comparative anatomy, from the indi-