APPENDIX C.

THE CORRELATION OF LIFE AND ENVIRONMENT IN THE SPHERE OF HEREDITY

In the text (III. 7. 2) we have considered specific cases of the reciprocity of the organic environment and the germ-cells. It may strengthen the position if we here consider the whole question from a more general aspect. To deny the correlation of life and environment in the sphere of heredity is to maintain, if we believe in evolution at all, the constant stability and identity of the germ-plasm throughout all the kinds and stages of organic life. Can this position be in any sense maintained ?

The whole conception of an absolutely stable germ-plasm is, as Romanes pointed out in his *Examination of Weismannism*, full of difficulty. If the germ-plasm is stable and continuous, then the germ-plasm of the most variant forms of life must, for all the differences of the expression of life, be somehow the same, not only derived from, but identical with, that of some infinitely remote ancestor. The germ-cells of the inconceivably remote primordial life are seen carrying the " determinants " of all the existent variants in genera and species, as well as of the infinitely more numerous variants which have been and are being lost in the endless " experimentation " of nature. If, again, the germ-plasm is stable and continuous, how can it at the same time be so plastic as to admit these endless variations ? Weismann answers that such questions involve a misunderstanding. " I have been asked to explain, for example, how the adaptations of flowers, fruits, and seeds in Phanerogams, could have been derived from a combination of characters acquired by the shapeless primordial ancestors. *The characters were not inherited from the primordial beings, but variability, or the dissimilarity of individuals.*" [1] But we

[1] *The Germ-Plasm*, p. 419. Italics Weismann's.