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ON HEREDITY.

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II. (*concluded*).

I have dwelt somewhat at length on the transmissibility of useless characters, for it is an aspect of the subject which more especially presents itself to the notice of the pathologist and physician; and little, if at all, to that of those naturalists whose studies are almost exclusively directed to the examination of organisms in their normal condition. But when we look at Man, his diseases form so large a factor in his life, that they and the effects which they produce cannot be ignored in the study of his nature.

Much has been said and written during the last few years of the transmission from parents to offspring of characters which have been *acquired* by the parents, so that I cannot altogether omit some reference to this subject. It will conduce to one's clearness of perception of this much-discussed question if one defines at the outset in what sense the term "acquired characters" is employed; and it is the more advisable that this should be done, as the expression has not always been used with the same signification. The term may be used in a wide or in a more restricted sense. In its wider meaning it may cover all the characters which make their first appearance in an individual, and which are not found in its parents, in whatever way they may have arisen:

1st. Whether their origin be due to such molecular changes in the germ-plasm as may be called spontaneous, leading to such an alteration in its character as may produce a new variation; or,

2nd. Whether their origin be accidental, or due to habits, or to the nature of the surroundings, such as climate, food, etc.

Prof. Weismann has pointed out with great force the necessity of distinguishing between these two kinds of "acquired characters," and has suggested two terms the employment of which may keep before us how important it is that these different modes of origin should be recognized. Characters which are produced in the germ-plasm itself by natural selection, and all other characters which result from this latter cause, he names *blastogenic*. He further maintains that all blastogenic characters can be transmitted; and in this conclusion, doubtless, most persons will agree with him. On the other hand,