

CHAPTER 4	The Work of Lamarck and Wallace	BLM 4.2.1
HANDOUT		

Read excerpts from Wallace's and Lamarck's original work and answer the questions below.

Zoological Philosophy

Jean-Baptiste Lamarck (1809)

The environment affects the shape and organization of animals, that is to say that when the environment becomes very different, it produces in course of time corresponding modifications in the shape and organization of animals.

If a new environment, which has become permanent for some race of animals, induces new habits in these animals, that is to say, leads them into new activities which become habitual, the result will be the use of some one part in preference to some other part, and in some cases the total disuse of some part no longer necessary.

Nothing of all this can be considered as hypothesis or private opinion; on the contrary, they are truths which, in order to be made clear, only require attention and the observation of facts.

Philosophie Zoologique, Paris, 1809

Translated by H. Elliott, Macmillan Company, London, 1914

On the Tendency of Varieties to Depart Indefinitely from the Original Type

Alfred Russel Wallace (1858)

Useful Variations Will Tend to Increase, Unuseful or Hurtful Variations to Diminish

Most or perhaps all the variations from the typical form of a species must have some definite effect, however slight, on the habits or capacities of the individuals. Even a change of colour might, by rendering them more or less distinguishable, affect their safety; a greater or less development of hair might modify their habits. More important changes, such as an increase in the power or dimensions of the limbs or any of the external organs, would more or less affect their mode of procuring food or the range of country which they inhabit. It is also evident that most changes would affect, either favorably or adversely, the powers of prolonging existence. An antelope with shorter or weaker legs must necessarily suffer more from the attacks of the feline carnivora; the passenger pigeon with less powerful wings would sooner or later be affected in its powers of procuring a regular supply of food; and in both cases the result must necessarily be a diminution of the population of the modified species.

If, on the other hand, any species should produce a variety having slightly increased powers of preserving existence, that variety must inevitably in time acquire a superiority in numbers.

Journal of the Proceedings of the Linnean Society,

August 1858, London

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Questions

1. What is the role of the environment in the passage written by Lamarck?

2. What is the role of the environment in the passage written by Wallace?

3. Based on the passage presented here, do you consider Lamarck's observations to be scientific? Explain your answer.

4. Describe an alternate explanation for the process that Lamarck describes.

5. Research Darwin's *On the Origin of Species* (1859). Read and summarize a small section of the text that supports Wallace's viewpoint. Name the chapter and section that you read and include a relevant passage.
