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PALEONTOLOGY VERSUS GENETICS[1]

By Professor HENRY FAIRFIELD OSBORN

THE AMERICAN MUSEUM OF NATURAL HISTORY

AN interesting coincidence in the history of observation and speculation upon the nature and causes of evolution is found in the life studies of William Bateson and of the present author. In the years 1879 to 1882 Bateson was a student in the University of Cambridge. After an early zoological and embryological training he began an intensive study of variation as shown in recent osteological material, continued for a while in the biometric school and then became founder of the school of genetics. In the year 1879 the present author at the age of twenty-two was in Cambridge studying embryology under Balfour; he then took up studies in comparative anatomy and with Scott founded a new school of vertebrate paleontology.

[1] This article is an abstract of two addresses: "Bearing of Titanothere Researches on the Principles of Descent and Adaptive Radiation of the Mammals," American Philosophical Society, April 24, 1930; "Bearing of Titanothere Researches on the Principles of Mechanical Evolution," National Academy of Sciences, April 29, 1930.

William Bateson's theories and conclusions became increasingly negative; in 1893 he wrote: "If the study of variation can serve no other end it may make us remember that we are still at the beginning, that the complexity of the problem of specific difference is hardly less now than it was when Darwin first showed that natural history is a problem and no vain riddle."[2] In his presidential address of December 28, 1921, speaking as a geneticist, he made the following declaration:

> Discussion of evolution came to an end primarily because it was obvious that no progress was being made. We became geneticists in the conviction that there at least must evolutionary wisdom be found. When students of other sciences ask us what is now currently believed about the origin of species we have no clear answer to give. We can not see how the differentiation

[2] William Bateson, "Materials for the Study of Variation Treated with Especial Regard to Discontinuity in the Origin of Species," p. xii, London, 1894.