

ments of biology, so here we have to note that *mutual influence* of the ruling doctrine and the concrete investigations which has been so characteristic of progress in the Darwinian era.

On the one hand, the doctrine of evolution has given the palæontologists fresh inspiration and a new ambition. As Von Zittel puts it, "Palæontology has long ceased to place itself exclusively at the service of geology as the study of characteristic fossils. . . . To determine the genetic relationships, the ancestry, the modification, and the further development, in short, the race-history or phylogeny, of the organisms under consideration is now regarded as the essential, by many indeed as the chief aim of palæontology."

No one has dealt with the so-called palæontological evidences of evolution more forcibly, and at the same time more rigorously, than Huxley did, and it is very instructive historically to read his addresses to the Geological Society of London in 1862 and in 1870. In the former address he asked, "What then does an impartial survey of the positively ascertained truths of palæontology testify in relation to the common doctrines of progressive modification, which suppose that modification to have taken place by a necessary progress from more or less embryonic forms within the limits of the period represented by the fossiliferous rocks?" And his answer was, "It negatives those doctrines; for it either shows us no evidence of any such modification, or demonstrates it to have been very slight; and as to the nature of that modification, it yields no evidence whatsoever that the earlier members of any long-continued group were more generalized in structure than the later ones".

In the second address, eight years later, he gladly found reason to soften his "somewhat Brutus-like severity", while still insisting that "it is no easy matter to find clear and unmistakable evidence of filiation among fossil animals". "It is easy", he said, "to accumulate probabilities—hard to make out some particular case in such a way that it will stand rigorous criticism." As to the Invertebrates and lower Vertebrates, the evidence