

the genealogy of the horse, his elucidation of the genetic relations of birds and reptiles, his memoir on Crossopterygia, are among the classical productions of palæontological and zoological science. The works of Gaudry deal with the genealogical relations of the different classes of animals and their descent from primæval ancestors, and are written so convincingly, and with such elegance of style, that they have roused an interest for palæontology in the widest circles. Scientific interest is chiefly concentrated upon his admirable contributions to the genealogies of the fossil Vertebrates. E. D. Cope,¹ together with Herbert Spencer, may be regarded as the head of the Neo-Lamarckian School, which has a strong foothold in North America. In opposition to Darwin, the gradual changes in the organic creation are not explained as the result of natural selection, but chiefly attributed to the influence of use and disuse of parts, and also to the influence of the external environment, such as the supply of nourishment, climatic conditions, mechanical agencies, etc. Upon these principles Cope has attempted to explain the *Kinetogenesis* or gradual evolution and modification of the skeletal structures and teeth of Vertebrates. More recent work by H. F. Osborn, carried out in accordance with Cope's conceptions, has attained a certain success.

Amidst the very large number of special memoirs and books which treat individual sub-divisions and groups of fossil animals, it is only possible here to single out those which have exerted a marked influence upon the progress of systematic palæozoology, or on the phylogenetic relations of fossil faunas.²

¹ Edward Drinker Cope, born 1840 in Philadelphia, belonged to an old and wealthy family; as a boy he was fond of travel, and at nineteen years of age he published a valuable zoological memoir on Batrachians. On the conclusion of his studies in Philadelphia, he made a journey to Europe in 1863 to become acquainted with the European museums. In 1864 he accepted the post of Professor of Comparative Anatomy at Haverford College, but he resigned it in 1867. From 1865 onward, Cope devoted his time chiefly to the study of fossil Vertebrates, and partly at his own expense, partly as a member of the Hayden and Wheeler Expeditions, he made exploring tours in search of material through Kansas, Colorado, Wyoming, New Mexico, and Texas, at the same time producing a large number of memoirs. In 1889 he was appointed Professor of Geology and Mineralogy at the Academy in Pennsylvania; he died on the 12th April 1897. His large collection of fossil Mammalia was secured by the American Museum in New York.

² The works mentioned in the following pages are fully cited in the references subjoined to Zittel's *Handbook*.