

has been of the very greatest importance for the phylogeny of the whole class of birds. All birds previously known presented a very uniformly organized group, and showed no striking transitional forms to other vertebrate classes, not even to the nearly related reptiles. But that fossil bird from the Jura possessed not an ordinary bird's tail, but a lizard's tail, and thus confirmed what had been conjectured upon other grounds, namely, the derivation of birds from lizards. This single fossil has thus essentially extended not only our knowledge of the age of the class of birds, but also of their blood relationship to reptiles. In like manner our knowledge of other animal groups has been often essentially modified by the accidental discovery of a single fossil. The palæontological records must necessarily be exceedingly imperfect, because we know of so very few examples, or only mere fragments of very many important fossils.

Another and very sensible gap in these records is caused by the circumstance that the *intermediate forms* which connect the different species have, as a rule, not been preserved, and for the simple reason that (according to the principle of divergence of character) they were less favoured in the struggle for life than the most divergent varieties, which had developed out of one and the same original form. The intermediate links have, on the whole, always died out *rapidly*, and have but rarely been preserved as fossils. On the other hand, the most divergent forms were able to maintain themselves in life for a longer period as independent species, to propagate more numerous, and consequently to be more readily petrified. But this does not exclude the fact that in *some* cases the connecting intermediate forms of the species have been preserved so perfectly petrified, that