

and *Hyracotherium*, types which he carefully studied and yet omitted from the horse line! It is the right system of thought which is most essential to progress; better in the end wrong results such as the above, reached by the right method, than right results reached hap-hazard by a vicious method. If a student asks me how to study palaeontology, I can do no better than direct him to the *Versuch einer natürlichen Classification der fossilen Hufthiere*, out of date in its facts, thoroughly modern in its approach to ancient nature. This work is a model union of the detailed study of form and function with theory and the working hypothesis. It regards the fossil not as a petrified skeleton, but as moving and feeding; every joint and facet has a meaning, each cusp a certain significance. Rising to the philosophy of the matter, it brings the mechanical perfection and adaptiveness of different types into relation with environment, the change of herbage, the introduction of grasses. In this competition it speculates upon the causes of the rise, spread and extinction of each animal group. In other words the fossil quadrupeds are treated *biologically*—so far as possible in the obscurity of the past. From such models and from our own experience we learn to feel free to abandon traditions in the use of the tools of science, such as mere methods of description and classification, and to regard priority in nomenclature only.

New discoveries continually produce new conditions; there is nothing more obstructive than the reverence for old ideas and systems which have outlived their usefulness. In observation, an old principle was *de minimis non curat lex*; now, we cannot be too exact. Every cusp and facet has its value, not as a sign-post for a new species, but as suggestive of some function or relationship. Bird's-eye methods of comparison, which, for example, find no difference between a rhinoceros and a lophiodon molar, are of no service now that we are called upon to distinguish between so many lines of ancient mammals crowding in among the ancestors of existing mammals. Again, palaeontology is not a science apart; it has always gone hand in hand with recent osteology; it must now keep abreast with the embryology of the teeth and skele-