register of affinities, it was used to express the supposed facts of descent. To Ernst Hæckel belongs the credit, or, as some critics would say, the responsibility of introducing the use of genealogical trees in zoology and botany. In his *Generelle Morphologie* (1866), and in his *Schöpfungsgeschichte* (9th edition, 1897), he displayed numerous genealogical trees designed to show the descent of various stocks and types of animals and plants.

There can be no doubt that in so doing he focussed the idea of descent into vividness, and by the very definiteness of the notation forced naturalists to a criticism of the reality of the supposed lines of descent.

Prof. L. von Graff says of Hæckel's *Stammbaüme*, "there is due to them the immortal credit of having given the first impetus to the grand revolution in the animal morphology of the last decades".

On the other hand, there are critics who maintain that the method is fallacious. If we had a knowledge of all forms that have lived, and a perfected classification of all these forms, then the tree-notation would be permissible. It would simply be another way of stating the perfected classification. But such perfection is unattainable. It is further urged, that while the notation may be permissible to express degrees of affinity, it has led by its symbolic suggestiveness to the common error of regarding a series of affinities as necessarily representing the actual line of descent. To take an obvious case, the double-breathing mud-fishes or Dipnoi are in many ways intermediate between fishes and amphibians, and might be appropriately represented in this position on a genealogical tree, yet it would be a mistake to suppose that the Dipnoi were the real ancestors of the Amphibia. But we cannot abandon a vivid notation simply because the careless read more into it than it is meant to express.

In justice to Hæckel, a single sentence may be quoted:—" Of course this genealogical tree, which represents the natural classification (system) of organisms, can never be drawn with absolute certainty, but always only in approximation thereto ".