

organic individual, without having an idea of the palæontological history of the whole tribe, of which fossils are the records. And yet these two branches of the organic history of development—ontogeny, or the history of the individual, and phylogeny, or the history of the tribe—stand in the closest causal connection, and the one cannot be understood without the other. The same may be said of the systematic and the anatomical part of Biology. There are even now, in zoology and botany, many systematic naturalists who work with the erroneous idea that it is possible to construct a natural system of animals and plants simply by a careful examination of the external and readily accessible forms of bodies, without a deeper knowledge of their internal structure. On the other hand, there are anatomists and histologists who think it possible to obtain a true knowledge of animal and vegetable bodies merely by a most careful examination of the inner structure of the body of some individual species, without the comparative examination of the bodily form of all kindred organisms. And yet here, as everywhere, the internal and external factors, to wit, Inheritance and Adaptation, stand in the closest mutual relation, and the individual can never be thoroughly understood without a comparison of it with the whole of which it is a part. To those one-sided specialists we should like in Goethe's words to say:—

We must, contemplating Nature,  
Part as Whole, give equal heed to :  
Nought is inward, nought is outward,  
For the inner is the outer.\*

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\* Müsset im Naturbetrachten  
Immer Eins wie Alles achten.  
Nichts ist drinnen, Nichts ist draussen,  
Denn was innen, das ist auszen.