

velopment does not in itself afford at present any absolute criterion whatever for the determination of homology". Similar structures arise in different ways: "The stomodæum of *Lopadorhynchus* (an annelid worm) is undoubtedly homologous with that of the earth-worm, though the one appears as a paired, the other as a single median structure. The ventral nerve-cord of *Polygordius* (a primitive annelid) is certainly homologous with that of the earth-worm, though the former appears as a median unpaired thickening of ectoderm, while the latter arises by the concrescence of two widely separated halves." There is an extraordinary contradiction between the bud-development and the ovum-development in Tunicates, though the same results may be reached by the two methods. In fact, though it is a hard saying, "homology is not established through precise equivalence of origin, nor is it excluded by total divergence".

Thus we understand the reaction to the standard of Owen, which defines homology in reference to the structure and structural relations of the developed organ. As Prof. Wilson says: "We must primarily take anatomy as the key to embryology, and not the reverse. Comparative anatomy, not comparative embryology, is the primary standard for the study of homologies, and hence of genealogical descent. . . . It is the prospective and not the retrospective aspect of development that is decisive."

Gegenbaur, although in great part an embryologist, has been a consistent upholder of the position that comparative anatomy furnishes the secure basis of homologies. Prof. E. B. Wilson translates the following passage, which expresses Prof. Gegenbaur's position:—

"If we are compelled to admit that kainogenetic characters are intermingled with palingenetic, then we cannot regard ontogeny as a pure source of evidence regarding phyletic relationships. Ontogeny, accordingly, becomes a field in which an active imagination may have full scope for its dangerous play, but in which positive results are by no means everywhere to be