

also gives rise to the embryonic axis or notochord; while the rest of the body (such as muscles and skeleton) is mainly due to a third stratum of cells (mesoderm), which usually arises between the ectoderm and the endoderm.

For many years embryologists, from Von Baer onwards, were much concerned with the origin of these germinal layers, and with showing how they gave rise, separately or in combination, to the various organs of the body. It was held to be one of the criteria of complete homology, that anatomically similar organs should be traceable to an origin in similar layers. It was held that homology must be corroborated by "*homodermmy*", and the fundamental similarity of the germ-layers throughout the Metazoa was the keystone of the so-called germ-layer theory (*Keimblättertheorie*); and it was in this connection a step of historical importance when Huxley (1849) collated the epiblast and hypoblast of the embryo with the two layers of cells which are seen in the structure of an adult polype, like the common hydra.

Gradually, however, the confidence of embryologists in this germ-layer theory has been shaken—by the following, among other considerations. (*a*) What one may call the stratification of the embryo is established in very different ways in different types; (*b*) there are some cases, notably sponges, where the products of the ectoderm and the endoderm cannot be readily brought into line with the state of affairs in the majority; (*c*) the mesoderm is so varied in its origin (from ectoderm, endoderm, or both), and in its occurrence, that the conception lacks even a pretence at unity; (*d*) in many cases the facts of development show that certain organs can be traced back to a few cells, specifically predestined from their first appearance, rather than to a homogeneous layer.

"It has become", E. B. Wilson says, "more and more clear that the germ-layer theory is, to a certain extent, inadequate and misleading, and that even the primary layers of the 'gastrula' cannot be regarded as strictly homologous throughout the animal kingdom.