

Paperback Re-issue

Organisms have disappeared as fundamental entities from modern biology, replaced by genes and their products as the primary determinants of selected characters. This is a consequence of Darwin's theory of descent with variation and survival of fitter variants. The first part of this book (by Gerry Webster) looks critically at the conceptual structure of Darwinism and describes the limitation of the theory of evolution as a comprehensive biological theory, arguing that a theory of biological form is needed to understand the structure of organisms and their transformations as revealed in taxonomy. The second part of the book (by Brian Goodwin) explores such a theory in terms of organisms as developing and transforming dynamic systems, within which gene action is to be understood. A number of specific examples, including tetrapod limb formation and *Drosophila* development, are used to illustrate how these hierarchically organized dynamic fields undergo robust symmetry-breaking cascades to produce generic forms. These are the basic morphological structures available for evolutionary transformations, whose classification into equivalence classes provides a basis for taxonomic relationships.

Form and Transformation was first published in 1997. Evolutionary and developmental biologists, geneticists and philosophers of science will all find this a thought-provoking book.

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