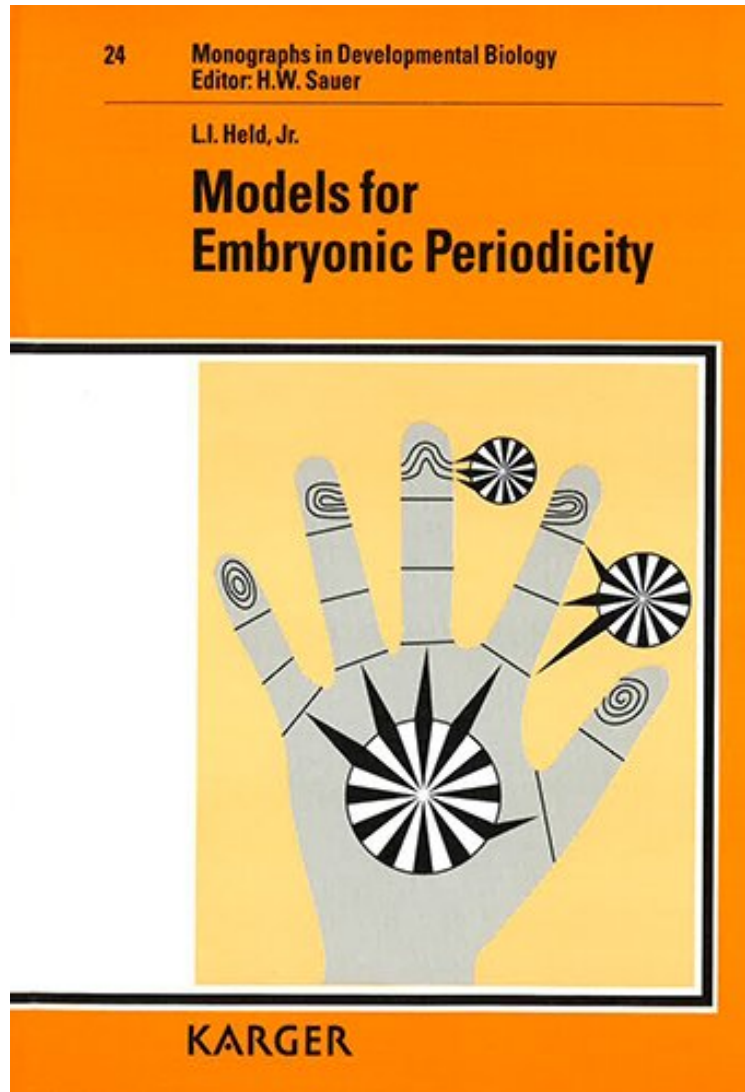


[Library ebook] Models for Embryonic Periodicity (Monographs in Developmental Biology, Vol. 24)

## Models for Embryonic Periodicity (Monographs in Developmental Biology, Vol. 24)

*L.I. Held Jr.*

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**L.I. Held Jr. : Models for Embryonic Periodicity (Monographs in Developmental Biology, Vol. 24)** before purchasing it in order to gage whether or not it would be worth my time, and all praised Models for Embryonic Periodicity (Monographs in Developmental Biology, Vol. 24):

2 of 2 people found the following review helpful. Just plain Interesting.By derek141I used this book, authored by my professor, while taking developmental biology in my final semester of a Cell Molecular Biology degree plan. The book reflects my professor's very interesting approach to learning development: skeptical examination (in the

iconoclastic tradition) of the principles underlying various models, which is more important than traditional undergraduate memorization of -say -mammalian embryonic fate maps (bo-ring!). His work is the first to hold developmental mechanisms up to the light together for a discriminating view. Don't forget your mental climbing boots when you read this- there's not an ounce of fluff.2 of 2 people found the following review helpful. Every developmental biologist should have this book.By John W. Fondon III Dr. Held has done a fantastic job distilling pattern formation processes to a collection of model classes. The bibliography alone is priceless - an superb piece of scholarship. Thank you, Dr. Held.1 of 1 people found the following review helpful. Superb scholarship!By John W. Fondon III An unbelievably thorough, yet concise distillate of the whole of classical biological patterning theory. The bibliography alone is priceless.

Spatially periodic patterns like zebra stripes or insect segments are mysteriously precise. How do they form during development? The deeper question, which lies at the heart of developmental biology, is: How do cells in different places within an embryo acquire different states of gene expression? In principle, there are three possible answers: either a cell's position causes its state, or its state causes its position, or both are caused by some third agent. These alternatives provide a framework for classifying theoretical models. Positional information models, the most widely used today, belong to the first category. Dozens of rival schemes have been proposed, but until now many have been overlooked because they were obscured by confusing jargon, impenetrable mathematics, or tortuous logic. In order to facilitate comparisons, this book (1) strips away all ad hoc assumptions to expose the central tenets of each model, (2) traces the historical roots and familial relationships among different types of models, and (3) illustrates the rules of each model in terms of how it would solve the same basic problem. It also reexamines the computer metaphor in developmental biology: Are embryonic cells robots in disguise? The surprising answer, based upon their ability to perform Boolean logic, store and process information, execute iterative subroutines and malfunction in predictable ways is yes! This valuable text by the author of the acclaimed new book *Imaginal Discs* (Cambridge University Press) is required reading for biologists and zoologists interested in the pattern subfield of developmental biology.