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 Book Reviews
 

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**Korochkin, L.I.: Gene Interactions in Development.** Translated from the Russian and edited by A. Grossman, *Monographs in Theoretical and Applied Genetics*, Vol. 4. Berlin, Heidelberg, New York: Springer 1981. XIII/318 pp. 109 figs. Hard bound \$ 51.50.

A few months ago I spent some time perusing this book in a bookstore, trying to decide whether I should buy it or not. I finally did not do so, not only because I found it rather expensive, but mainly because the book was written (in Russian) in 1975, and recombinant DNA techniques have caused a virtual revolution in eukaryotic molecular genetics since then. I have now had the opportunity to read this book more carefully but I am still undecided about it.

First its good points: this book discusses extensively virtually all aspects of what I would call "classical" developmental genetics (of animals). The first part of the book deals with intracellular processes: the differential expression of the genomic information during the development and in different tissues. After a short introduction to RNA and protein synthesis, the RNA synthesis patterns during embryogenesis are discussed, followed by a thorough review of tissue specific isozyme patterns. This section concludes with a description of interactions between nucleus and cytoplasm, both during embryogenesis and after somatic cell hybridization. In this first part you will also find a discussion of most textbook genetic mechanisms such as gene amplification, epistasis and pleiotrophy, allelic exclusion. Position effects, which also belong to this class, are mentioned in the second half of the book. This second half is mainly devoted to genetically determined interactions between cell populations. The best known examples of mutations which influence the development at this level are the homeotic mutations found by *Drosophila* (for example: *aristopedia* = legs instead of anten-

na; *bithorax* = transformation of metathorax into mesothorax) and separate chapters are devoted to such mutations. This section, and the book, concludes with a discussion about the organization of the eukaryotic genome and models for the control of gene expression during development.

There is an extensive list of references to the original papers from which the data that are used to illustrate the phenomena discussed were taken. Most of the research quoted refers to work with mice or *Drosophila*, the author's own research subjects. Work with amphibians is also mentioned but little reference is made to work with plants.

Now the negative side: first of all, the book has been translated by someone who is a biologist but probably not a geneticist. In consequence the standard terminology is not used. Furthermore, the English is poor, both as far as sentence construction and as far as word usage is concerned (eg. various instead of variant), hence the text is difficult to follow and the meaning of some sentences remains unclear. Secondly, the book is outdated, in spite of the author's revision for the English edition. Symptomatic for example is the fact that the topic of gene regulation is introduced with a discussion of gene regulation in bacteria and phages.

Furthermore, the words "intron" and "exon" are used only once in the text and are not to be found in the index. As a result, much of the information is misleading (at least as far as the *Drosophila* systems are concerned): often more recent data are available, which shed a different light on the problem, often we would now interpret the data differently.

In summary: this book gives a complete review of the genetic interactions during (animal) development as known in 1975. It does not give a good picture of the present state of knowledge nor of the present ideas.

N. H. Lubsen, Nijmegen