The Biology of Aging:
Observations and Principles,
Third Edition

Robert Arking

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# **Biology of Aging: Observations and Principles**

By Robert Arking



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Robert Arking's *Biology of Aging, 3rd edition*, is an introductory text to the biology of aging which gives advanced undergraduate and graduate students a thorough review of the entire field. His prior two editions have also served admirably as a reference text for clinicians and scientists. This new edition captures the extraordinary recent advances in our knowledge of the ultimate and proximal mechanisms underlying the phenomenon of aging. As a result, six important conceptual changes are included here:

· Clarified distinctions between the biological mechanisms involved in longevity determination and those involved in senescent processes. · A new conceptual framework around which we can organize all the new facts about aging. This will assist readers to make sense of the information and use the data to form their own ideas. · Increased knowledge of aging cells has lead to new ideas on how a cell transits from a healthy state to a senescent state, while still allowing for high levels of intra- and inter-specific variability. Discussion of senescent mechanisms assists the reader to understand that aging is a non-programmatic loss of function, likely arising from the loss of regulatory signals, and so is modifiable in the laboratory. Because the standard evolutionary story does not fully explain the evolution of social organisms, this edition also includes recent work dealing with intergenerational resource transfers. Lastly, if aging mechanisms are plastic, then the demand to move these anti-aging interventions into the human arena will inevitably grow. A discussion of the biological and ethical arguments on both sides of the question frames the question in an appropriate manner.

The mass of data related to aging is summarized into fifteen focused chapters, each dealing with some particular aspect of the problem. The last two chapters integrate all this material into a coherent view of how the relevant biological processes change over the life span. This view is expressed in two non-technical figures (you might say that the whole book exists to fully support Figs 9-4 & 14-9), whose meanings are elucidated as the reader progresses through the book.

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#### **Editorial Review**

Review

"This third edition is a timely and important contribution that compiles historical and recent research findings in a highly readable form and, as well, tackles some of the difficult conceptual problems in understanding aging"--American Journal of Human Biology

From the Publisher

A complete overview -- in a comparative, evolutionary context -- of the biological processes underlying aging at the cellular, organism and population levels.

About the Author

**Robert Arking** is a Professor of Biological Sciences at Wayne State University. His research involves the mechanisms underlying the onset of senescenece in *Drosophila*.

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