

While the subject of environmental stress in animals is broad, the available information is fragmentary and lacks an up-to-date overview and analysis.

Environmental Stress and Cellular Response in Arthropods fills these knowledge gaps. Written by three experts from the same institution, the chapters have a consistency not often found in multi-authored or contributed books. The authors describe environmental stress in arthropods, specifically *Drosophila*, and analyze the process in all its aspects, from biochemical mechanisms to effects on the whole organism.

Incorporating new information that has become available in recent years, the authors explore hypotheses about the integrated response these systems often have. They explore topics ranging from disturbance of homeostasis, changes in metabolic processes, damage of cellular structures to acquired tolerance, effects on aging processes, and survival and cell death. By analyzing all these aspects in detail at the molecular, biochemical, and physiological levels of the cell, the authors give you a thorough review of the relationship between an organism and its environment at the cellular level.

Features

- Provides an overview of all major stress defense systems and presents them as an integrated system
- Analyzes various forms of stress and their effects at the molecular, biochemical, and physiological levels
- Reviews cellular defense systems such as the stress-protein, oxidative stress response, the metallothionein, and the mixed function oxygenase systems on an individual basis
- Discusses the basal signal transduction system and the important role it plays in transducing intracellular stress signals
- Explores several hypotheses on the regulation of and induction of stress proteins, metallothioneins, and cytochrome P450 enzymes



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