

## BOOK REVIEW

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### *A Review of Perspectives in Basic and Applied Toxicology*

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**REFERENCE:** Ballantyne, B., Ed., *Perspectives in Basic and Applied Toxicology*, Butterworth and Co., 88 Kingsway, London, 1988, 393 pp.

This book contains 14 chapters, dealing mostly with specific responses of biological systems to toxicants and descriptions of current toxicity testing procedures.

The enlightening preface by Dr. Ballantyne, a plea for vigilance and enforcement of ethics in the fields of toxicology, is especially noteworthy and provocative. He notes interferences by the government in measures to protect the public health from toxic substances and implies a pervasive attempt to cover up the dangers in chemical and products by industrial toxicologists. An appropriate quote from Albert Einstein is evoked which is relevant to all scientists, "The right to search for truth implies also a duty. One must not conceal any part of what one has recognized as true."

The first chapter, "Biochemical Methods for Assessment of Neurotoxicants," is an excellent and comprehensive review of neurotoxicity, describing procedures for evaluating biochemical markers of brain function, disruption of neurotransmitters and brain receptor function, alteration of nervous system metabolic processes, and so forth. "Chemical Excitants of Cutaneous Pain" deals with cutaneous pain mechanisms, discussing effects and mechanisms of capsaicin ("hot peppers," remarkably an important pain reliever as well as pain excitant), tear gases, and others. A discussion of ototoxicity shows how various drugs (mostly antibiotics) can cause damage to hearing. An extensive chapter by Ballantyne discusses rhabdomyolysis (skeletal muscle injury) induction by a variety of commonly used drugs (such as strychnine, propranolol, neuroleptics, and opiates), including a review of published case studies.

Other chapters deal with the micronucleus test system (believed to result from chromosomal damage), developmental and reproductive toxicity, teratology, carcinogenicity, and the role of genetics in developmental toxicity. Also included are a discussion of assessment of antidotal procedures and a very useful review of many classic and current industrial poisoning circumstances (such as vinyl chloride and formaldehyde) relating epidemiology and animal studies. The final chapter deals with evaluation and communication of workplace hazards, suggesting proper product labeling and workplace standards.

In summary, this collection has a wealth of authoritative information, especially for the experimental toxicologist and student of toxicology, but also for those interested in or practicing industrial, environmental, clinical, or forensic toxicology.

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