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BIOLOGICAL MONITORING METHODS

Biological Monitoring Methods for Industrial Chemicals, 3rd Edition, *by* Randall C. Baselt. Hard Bound, 7" x 10".
Chemical Toxicology Institute, P.O. Box 8209, Foster City, California 94404. Publication Date 1997. xx + 400 pages, ISBN 0-9626523-2-6. Library of Congress Catalog Card No. 95-071023. Price $79.00

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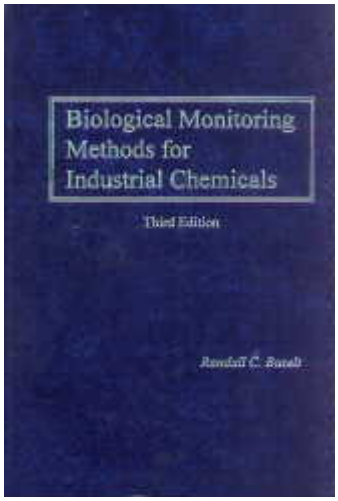

Occupational health, an important sub-division of Preventive and Social Medicine was neglected for centuries, even though there was sufficient evidence to link several illnesses, both acute and chronic, with particular occupations right from the time of Hippocrates. In fact it was Hippocrates himself who first noticed an association between persistent abdominal colic in a man, with his

occupation of extracting metals (around 370 BC). Even as civilization progressed, attended by rapid industrialization particularly in the West, scant attention was paid to the many ills plaguing industrial workers which arose out of their exposure to hazardous substances. In 1763, Benjamin Franklin reported on dry gripes (abdominal colic), and dangles (wrist drop), which afflicted painters and typesetters, while in 1863, Charles Dickens described graphically the plight of lead mill workers in "The Uncommercial Traveler."

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But the situation began changing in the early part of the 20th century with concerns being expressed for the first time about the need for protecting industrial workers from exposure to harmful chemicals. A number of reports began emerging on health conditions of workers in various occupations. A major boost was given by the Joint ILO/WHO Committee on Occupational Health during its first session in 1950, when it was declared that the promotion and maintenance of the highest degree of physical, mental, and social well being of workers in all occupations was of paramount importance. This truly marked the beginning of modern day Occupational Medicine and led to the enactment of effective legislation all over the world to govern working conditions in diverse occupations, with a view to safeguard the health of workers. As a result, programs were developed to regulate industrial chemical exposure, with emphasis on monitoring of contaminants in the work place, environmental controls, provision of protective clothing and equipment, requirement of periodic physical examinations of workers, and employee training in safety measures.

It was HB Elkins in 1954 who suggested that biological monitoring should be made a necessary adjunct to air analysis, in order to enhance the precision with which health hazards relating to chemical exposure could be evaluated. This is because the amount of a toxic substance absorbed by the human body cannot always be predicted solely on the basis of data obtained by air analyses. It is therefore fitting that the book under review in fact begins with a quote by this eminent pioneer of biological monitoring.

"..a large quantity of information has been expertly condensed into a slim volume, which is easy to handle, carry, and store in a modest bookshelf. More compact books of this sort would go a long way in the reduction of clutter in laboratories already overcrowded with equipment and technicians!"

While a number of monographs and books have been published in recent times on various aspects of biological monitoring programs, this beautifully produced volume by Dr. Randall C. Baselt stands out for a number of reasons. Firstly, even though it covers a field that could be intimidating because of the plethora of chemicals that need to be dealt with, the book presents in a lucid and cogent fashion, salient information on the most commonly encountered industrial chemicals. Alphabetical listing of these substances makes it eminently easy to locate a particular chemical of interest. Provision of basic toxicological information on every one of these substances serves as a prelude to a detailed discussion of the methods of biological monitoring and analysis. The author has taken pains to present updated accounts on all aspects, backed by recent authentic references. Division of the subject matter into sub-sections with appropriate sub-headings makes the whole book very readable and user friendly.

QUICK NOTES

Some major highlights of *Biological Monitoring Methods for Industrial Chemicals* at a glance:

- Book directed mainly to those in Industrial hygiene who hold a special interest in using biological monitoring
- Gives methods for the analysis of each chemical or its metabolites in physiological specimens
- Alternative methods included, at several places
- Procedures sufficiently detailed to be applied verbatim
- Each procedure referenced to original literature
- A good book for developing analytical methods in support of a biological monitoring program
- Useful for those active in the field of occupational health

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Further, while the book serves its stated purpose of presenting methods of biological monitoring for selected industrial chemicals quite admirably, it is gratifying that the same methods can also be utilized for clinical and forensic situations. This would be of great help to physicians treating poisoned victims in arriving at an accurate diagnosis by analysis of body fluids such as blood or urine, or even analysis of breath (exhaled air) and biopsied tissues. In most cases, the instruments required (gas chromatograph, liquid chromatograph, or spectrophotometer), can be easily procured and operated. For a forensic toxicologist, the book provides very useful information on autopsy confirmation of poisoning by analysis of postmortem tissues and body fluids. It would be desirable if the author could cover some more chemicals in the next edition in order to further expand the scope and utility of the book.

Another feature of this book that is remarkable is that such a large quantity of information has been so expertly condensed into a slim volume, which is easy to handle, carry, and store in a modest bookshelf. More compact books of this sort would go a long way in the reduction of clutter in laboratories already overcrowded with equipment and technicians! The cover is striking and yet dignified, the paper quality and printing impeccable, and the binding pretty near flawless.

Dr. Baselt in this reviewer's opinion deserves unqualified praise for his masterly presentation of a vital subject in an eye catching volume that should necessarily find a place in every laboratory or institute that deals with any aspect of Toxicology or Occupational Health.



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Dr.V.V.Pillay has been in the vanguard of the movement among medical professionals in India to develop the neglected field of Toxicology. He has published extensively in both the scientific and lay press on matters relating to Toxicology, as well as his chosen discipline - Forensic Medicine. Dr.Pillay has authored 6 books on Forensic Medicine and Toxicology, and has received an award for one of them (Modern Medical Toxicology), generally considered to be a trend setter among books on the subject in India. He has reviewed several books on Toxicology for the Internet Journal of Forensic Medicine and Toxicology. Dr.Pillay received a scroll of honour in appreciation of work done in the field of Toxicology from the Medicolegal Society, All India Institute of Medical Sciences, New Delhi. He has established a state-of-the-art Poison Control Centre, recognized by the World Health Organization at the institute where he is currently employed (AIMS, Cochin). Among his most sought-after publications is a 700 page reference work on Toxicology.

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