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BOOK REVIEW
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Book Review: "Toxic Effects of Mercury"

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A book review on
Toxic Effects of Mercury

Edited by Shabnum Nabi, Delhi: Springer, 2013, 268 pages. ISBN: 978-81-322-1921-7

Mercury (Hg) is a naturally occurring unique silvery metallic element with special property of being liquid at room temperature (Norrby, 1991; Tangahu et al., 2011). Both anthropogenic activities and natural processes cause its release into different spheres of the environment resulting in severe adverse impacts (Sundseth et al., 2015). Increased anthropogenic discharge of mercury leads to disturbance in its natural biogeochemical cycle which results in to unenviable diseases and hazardous health effects (Zhang et al., 2014). Mercury pollution is responsible for causing several diseases related to neurobehavioral changes, kidney, heart, gastrointestinal, liver etc. Many monographs, book chapters, contemporary reviews, and peer reviewed articles about Hg health impact are also available worldwide. However, there is no complete understanding available on toxicological studies of Hg, which covers the broader spectrum of findings that range from sources of exposure to Hg toxicity.

A new book "*Toxic effects of mercury*" edited by Shabnum Nabi (Springer, 2014, ISBN 978-81-322-1921-7) provides a contemporary consideration of the perils of global mercury pollution and its threats to environment and human health. Besides reviewing many recent reports on high mercury levels in different spheres of environment, the book throws light on the severity of mercury consumption through contaminated fish and other food products with emphasis on bioaccumulation and biotransformation in the environment. The book is divided into nine parts which are- (i) history of mercury toxicity, (ii) review of literature, (iii) toxicity evaluation methodology, (iv) free radicle stress, (v) toxic responses of antioxidant defense system, (vi) systematic toxicology, (vii) neurobehavioral toxicology, (viii) genetic toxicity, and (ix) methyl mercury toxicity and linked diseases. These parts are further spread across 32 chapters containing a wide range of topics that elaborate every concept with in-depth understanding.

The first thought of any reader might be—why yet another book on mercury pollution and human health? Indeed, the focus on environment is not what makes this book stand out, since environment has been the object of many mercury pollution studies, but, the outstanding volume of literature pertaining to the impact of mercury pollution on environment in general and linking it with human health in particular is one of the major strength of this book. The book reaches out to a wide range of readers including beginners and graduate students since the explanation of each concept from very beginning is reader friendly, for example, the basic of mercury chemistry i.e., its position in periodic table, properties, occurrence, history, and its interaction with the environmental elements and their outputs. The major highlights of the book are: the description of various toxicity evaluation methods for mercury which are lacking in several books, starting from animal models, analytical test, and biochemical assays to neurobehavioral assessment models; the pathways and signaling related to mercury stress and an understanding

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of the systemic, neurobehavioral, and genetic toxicology of mercury. A significant portion of the book is dedicated for explaining toxicity of methylmercury, the most lethal form of mercury. The relation of methylmercury with some of the most challenging diseases such as Parkinson's disease, Alzheimer's disease, autism and lupus is explained with models and their assay techniques. This concept building form of writing in the book easily develops a basic understanding on the topic and can help far-reaching readers like researchers, students, medical experts, scientific experts from government and non-government organizations of this field.

As the theme of the book is toxic effects of mercury, along the way the book focusses on title in each part and also in all chapters. Although the book contains most of the necessary elaborative topics related to Hg toxicity but it leaves certain voids on area like oceanic mercury pollution and its impacts, which is also a burning issue. Organization of chapters in each part is the beauty of the book and it creates a stream of understanding of the concept. The best part is description in addition with evaluation techniques which makes it most exclusive and comprehensive knowledge bank of the subject.

AUTHOR CONTRIBUTIONS

SK: read the book and reviewed for the publication. CG: supervised the work and checked for the betterment.

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