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Book reviews

J. Albaiges^a

^a CID-CSIC, Barcelona, Spain

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BOOK REVIEWS

Geostatistics for Environmental Scientists, Second Edition, by Richard Webster and Margaret A. Oliver, Chichester, UK, John Wiley & Sons, Ltd, 2007, 318 pp., EUR 99.90, ISBN 978-0-470-02858-2

The assessment of spatial and temporal variations of natural and man-made attributes, such as weather variables or the distribution of pollution, are key issues in environmental sciences. To analyse the varied kinds of data and to predict at unvisited places from them, environmental scientists need to be familiar with the techniques of Geostatistics. This revised and fully up-dated edition provides comprehensive coverage of the techniques involved in this vital branch of statistics.

First, the book introduces readers to the basic statistics as well as to the concepts of prediction and interpolation. Then, the structure of the book follows the order in which an environmental scientist would tackle an investigation. It begins with sampling, followed by data screening, summary statistics and graphical display. It includes some of the empirical methods that have been used for mapping, and the shortcomings of these that lead to the need for a different approach. This last is based on the theory of random processes, spatial covariances, and the variogram, which is central to practical geostatistics. Practitioners will learn how to estimate the variogram, what models they may legitimately use to describe it mathematically, and how to fit them. Their attention is also drawn to some of the difficulties of variography associated with the kinds of data that they might have to analyse. There is a brief excursion into the frequency domain to show the equivalence of covariance and spectral analysis.

The book then returns to the principal reason for geostatistics, which is local estimation by kriging, in particular ordinary kriging. Co-regionalisation is introduced as a means of improving estimates of a primary variable where data on one or more other variables are to hand or can be obtained readily. There is an introduction to non-line methods, including disjunctive kriging for decision-making. The final chapter is on geostatistical simulation, which is widely used in the petroleum industry and in hydrology.

Geostatistics is not easy. Therefore, the authors have added an aide-mémoire for spatial analysis, which can be read and reread as often as necessary, followed by some simple program instructions in the GenStat language for carrying out the analyses. These, with a few other commands to provide the necessary structures to read data and to write and display output, should enable practitioners to get started, after which they can elaborate their programs as their confidence and competence grow. This is certainly an invaluable text for advanced undergraduate and graduate students of spatial variation and environmental research.

Tomorrow's Chemistry Today. Concepts in Nanoscience, Organic Materials and Environmental Chemistry, edited by Bruno Pignataro, Weinheim, Germany, Wiley-VCH Verlag GmbH & Co, 2008, 493 pp., EUR 92.52, ISBN 978-3-527-31918-3

Tomorrow's Chemistry Today is a book intended to showcase excellence in chemistry by inviting a selection of young chemists each to write a chapter on their research field, their main results, and the perspectives they envision for the future.

The book contains 18 interdisciplinary contributions, grouped into three main sections: "Self-organization, nanoscience, and nanotechnology", "Organic synthesis, catalysis, and materials", and "Health, food, and environment". In the first part, emphasis is given to the efforts made in the exploitation of improved knowledge of non-covalent interactions to synthesize new molecules having hierarchical structure, possibly mimicking Nature. Particular strategies of synthesis are described for the design and assembly of supramolecular structures having desired properties as catalysts, sensors, molecular machines, switches, photoactive or electroactive components for optoelectronics as well as light-emitting diodes, thin-film transistors, photovoltaic cells and nanodevices.

The book continues with other contributions in the area of materials and catalysis. Important concepts are treated, like that of exploiting nonlinear optical behaviour of certain classes of materials which emit in the short wavelength region, such as the visible region, when excited by another region such as the infrared. This property leads to many advantages, especially in biological studies, telecommunications, and three-dimensional optical storage, and it is potentially important for bio-imaging. Studies in the catalytic-organic chemistry area are enriched here by an elegant contribution on selective hydrogen transfer reactions over supported copper catalysts leading to simple, safe, and clean protocols for organic synthesis.

In the last part of the book some examples are reported on the importance of chemical studies to fields such as health, food and the environment. One of these describes investigation of the protein — tannin interaction in order to better understand organoleptic properties of foodstuffs and, in particular, those of red wine. Two other chapters give an overview of the analogues and derivatives of cisplatin and the alternatives for it, the ruthenium-based drugs reported for tumour biology, and present both future perspectives of medicinal chemistry for speeding up discovery chemistry in the field and future strategies for drug design. Last but not least, a chapter is devoted to the important photochemical transformation processes of environmental significance and their possible influence on climate change.

The contributions reported in this unique book clearly show that chemistry is continuously developing its knowledge base, techniques, and paradigms, and collaborating with other scientific areas to open entirely new fields at the interface with physics or life sciences. In conclusion, such a book, directed to a broad readership, will certainly be a source of new ideas and innovation for the research work of many scientists, the contributions covering many of the frontier issues in chemistry.

Fundamentals of Analytical Toxicology, by Robert J. Flanagan, Andrew Taylor, Ian D. Watson and Robin Whelpton, Chichester, UK, John Wiley & Sons, Ltd, 2007, 505 pp., £39.95, ISBN 978-0-470-31935-2

Analytical toxicology faces a series of issues which are unique in conventional analytical disciplines. Besides the large variety of analytes to be considered (e.g. gases, solvents, pesticides, drugs, metals), in pure form or as mixtures, and at a wide range of levels, the

samples may include unusual substrates such as any component of the body, or related materials such as elaborated or digested foodstuff. The book aims to give principles and practical information on the analysis of drugs, poisons and other relevant analytes in biological specimens, particularly clinical and forensic specimens.

After providing some background information and a general overview of the topic, the first chapters cover in depth relevant aspects of sample collection, transport, storage and disposal, and sample preparation, specifically focused on the toxicology area. The following chapters introduce the analytical techniques — colour tests and spectrophotometry, chromatography (TLC, GC, HPLC) and electrophoresis, mass spectrometry and immunoassay — and a chapter is devoted to the analysis of trace elements and toxic metals. Taking into account the specific aim of the book, the applications in analytical toxicology of each one of these techniques could have been more extensively illustrated at the expenses of a too detailed, but by the way excellent, description of their fundamentals.

Then, general aspects of laboratory operations and implementation/validation methods are detailed, such as the quality control and proficiency testing. Particular attention is given to the role of the toxicological laboratory in validating and monitoring the performance of point of care testing (POCT) devices. The book concludes with reviews of xenobiotic absorption, distribution, metabolism and excretion, pharmacokinetics, and general aspects of the interpretation of analytical toxicology results.

The book is very well illustrated, easy to understand and pleasant to read, and contains a wealth of dedicated information. Therefore, it will prove invaluable for those starting out in a career in analytical toxicology across a wide range of disciplines, including clinical and forensic science, food safety, and pharmaceutical development.

The Black Sea Environment, edited by Andrey N. Kosarev and Aleksey G. Kostianoy, The Handbook of Environmental Chemistry, Volume 5, Part Q, Heidelberg, Germany, Springer-Verlag GmbH, 2007, 471 pp., EUR 266.43, ISBN: 978-3-540-74291-3

This title may be regarded as a follow-up to the previous volume in the series, published by the same editors on another highly threatened ecosystem, *The Caspian Sea Environment* (see *IJEAC*, **86**, 1179, 2006). A particular feature of the monograph lies in the combination of different methods used for analysis and calculations. They include addressing archived materials, analysis of classical observational data on hydrology and hydrochemistry, use of the satellite data, generalisation of the results obtained in different calculations and numerical modelling. Thus, the book presents a systematisation and description of the knowledge accumulated today, based on numerous observational data, collected by the authors of the chapters during sea and shore expeditions, on the archive data of Russian and Ukrainian research Institutions.

The book consists of 17 chapters, which may be conventionally joined into the following sections. The first part contains the chapters devoted to the history of the studies of the Black Sea, the description of the bottom and coastal topography, the quaternary paleogeography of the basin, the detailed information about the riverine runoff, and the estimation of the hydrometeorological factors. The second section reflects the character of the hydrological structure and water circulation in the sea, including an analysis of its mesoscale vertical dynamics based on satellite observations. Subsequently, the hydrochemical part concerns the thermohaline and vertical hydrochemical structures of the sea and one of its fundamental issues — the character of the processes within the hydrogen sulphide zone and in the boundary layer at its upper interface. The biological chapters

assess the seasonal and interannual variability of remotely sensed chlorophyll, the biodiversity and bioproductivity, and consider in detail the role of invaders in the marine ecosystem. The monograph is completed with a discussion of environmental aspects as well as socioeconomic, legal and political issues of the Black Sea. An individual chapter of the book is devoted to the Sea of Azov.

This book addresses the specialists working in various fields of physical oceanography, marine chemistry, pollution studies, and biology and studying a cascade of problems: from regional climate to mesoscale processes and from remote sensing of the sea to numerical and laboratory modelling. It may also be useful to students and post-graduates specialising in oceanographic research, as many unique processes occur in this extremely interesting basin.

Fuel Oxygenates, edited by Damia Barcelo, The Handbook of Environmental Chemistry, Volume 5, Part R, Heidelberg, Germany: Springer-Verlag GmbH, 2007, 427 pp., EUR 194.95, ISBN: 978-3-540-72640-1

A variety of ethers and alcohols were developed in the 1970s as octane enhancers to replace toxic additives, like organolead, that were phased out of gasoline. Methyl tert-butyl ether (MTBE) is by far the most commonly used, but other oxygenates that can potentially be used are ethyl-tertiary-butyl ether (ETBE), methyl and ethyl tert-amyl ethers (TAME and TAAE), diisopropyl ether (DIPE) and tert-butyl alcohol (TBA).

A large number of scientific studies have documented their presence in groundwater supplies and other water reservoirs, especially in the US. The present book offers a comprehensive overview of the environmental problems related with the use of these substances and particularly with the contamination of groundwaters, mostly in Europe. The book is organised in five sections, mainly dealing with MTBE and TBA: Novel analytical methods for the determination of fuel oxygenates in water, occurrence in the aquatic environment, transport and degradation processes, treatment technologies, including bioremediation of groundwater, adsorption, abiotic and microbial degradation and health risks associated to drinking water.

Written by recognised specialists in the field, this book will be of interest to a broad audience of analytical chemists, environmental scientists, toxicologists and technologists working in the field of the water cycle, but also to policy makers and stakeholders that need to manage real-world environmental problems associated with fuel oxygenates contaminating groundwater resources. Overall, the present book is certainly timely since the interest in fuel oxygenates in the environment has grown considerably during the last few years.

Reviews of Environmental Contamination and Toxicology, Volume 190, edited by George Ware and D. M. Whitacre, Heidelberg, Germany, Springer-Verlag GmbH, 2007, 193 pp., EUR 99.46, ISBN: 978-0-387-36900-6

The role of this *Reviews* series is to publish detailed scientific review articles on all aspects of environmental contamination and associated toxicological consequences. Such articles facilitate the often-complex task of accessing and interpreting scientific data within the confines of one or more closely related research fields. The present volume includes articles on “Dioxin formation from waste incineration” and on the “Environmental and human health assessment of aerially applied glyphosate for coca and poppy eradication in Colombia”.

The chapter on the formation of dioxins during combustion considers various types of wastes, including different kinds of paper and wood, food samples, polyethylene, polystyrene, polyvinyl chloride, polyethylene tetraphthalate, and various kinds of plastic products. The mechanisms of formation during incineration and the resulting Toxicity Equivalence Quantity (TEQ) in exhaust from incinerated samples are also described.

The consumption of illicit natural drugs is a problem that affects some 200 million people around the world, but the eradication programmes, based on the aerial spray of herbicides have led to concern on the adverse effects that the spraying may have on other crops and the population. This multi-authored chapter offers a comprehensive overview of problems associated with the extensive use of glyphosate in Colombia, assessing the effects and exposure and characterising the risk, for both humans and the environment. Based on the information gathered, some recommendations for a better development of the current practices are formulated.

Reviews of Environmental Contamination and Toxicology, Volume 191, edited by George Ware and D. M. Whitacre, Heidelberg, Germany, Springer-Verlag GmbH, 2007, 240 pp., EUR 99.46, ISBN: 978-0-387-69162-6

Following the scope of the series, the present volume includes six reviews on different subjects related to the presence and toxicity of environmental contaminants and to new environmental contamination cases. The first one deals with “Polycyclic aromatic hydrocarbons in the South American environment”, reporting levels in air, soil, water, sediment, foodstuffs, biota and health issues, and emphasizing critical data gaps and capacity building needs in the region. The second article gives an overview on “Silver as a disinfectant”, in the treatment of water, dietary supplements, medical applications and antimicrobial products, and outlines the mechanisms of action as well as the synergistic effects. The needs for further research, to determine the efficacy in new applications and the effects of its long-term usage, for silver to be accepted as a disinfectant by regulatory agencies, are pointed out.

The following chapters, entitled “Impact of soil properties on critical concentrations of cadmium, lead, copper, zinc, and mercury in soil and soil solution in view of ecotoxicological effects” and “Critical soil concentrations of cadmium, lead, and mercury in view of health effects on humans and animals”, present overviews of methodologies used to derive critical (i) reactive and total metal concentrations in soils and (ii) free metal ion and total metal concentrations in soil solution, taking into account the effect of soil properties in the transfer processes and using available NOEC soil data. This information is relevant for assessing ecological and human toxicological risks.

The study of the occurrence and fate of antibiotics in the environment is increasingly interesting the scientific community. “Fluoroquinolone antibiotics in the environment”, provides a comprehensive overview for this type of compounds, stressing the processes that enhance their persistence, like sorption in soils and sediments, their degradation pathways and elimination in wastewater treatment plants, and the gaps in risk assessment. Finally, “Explosives: fate, dynamics, and ecological impact in terrestrial and marine environments” cover another timely topic that concludes that there is a need to direct future research on expanding our knowledge on the environmental fate of energetic products and on the impact of bioavailability on ecological risk assessment.

This particular volume and the whole series will be appreciated by scientists and science or policy administrators, whether employed by government, universities or the private sector, as well as by scholars interested in environmental issues.

Reviews of Environmental Contamination and Toxicology, Volume 192, edited by George Ware, Heidelberg, Germany, Springer-Verlag GmbH, 2008, 216 pp., EUR 99.90, ISBN: 978-0-387-71723-4

Reviews makes available to readers, in an abridged form, the staggering volume of scientific literature existing on key environmental topics. In this volume, a short article on “Polycyclic aromatic hydrocarbons (PAHs) from coal combustion: emissions, analysis and toxicology” discusses the different topics relevant for a better understanding of this pollutant source. A second article, entitled “Pasture soils contaminated with fertilizer-derived cadmium and fluorine: livestock effects”, reviews the sources of these elements, associated with fertilizers, in agricultural soils, their dynamics in pastoral soils and accumulation in edible offal products, and their intake and distribution in livestock. Finally, it proposes the necessary measures to control cadmium and fluorine accumulation in soils, pastures and livestock, and outlines the main areas for research in the field.

An extensive article on “Aquatic plants exposed to pharmaceuticals: effects and risks” reviews from the evolutionary conservation of receptors and metabolic pathways to the toxic effects induced in nontarget aquatic plants. After examining the differential sensitivity to pharmaceuticals, it concludes that, with few exceptions, the risk is generally low, although the application of sublethal pathway or receptor-specific responses in risk assessment has largely been unconsidered, and future research is needed to elucidate whether evaluating the toxicity of pharmaceuticals using these endpoints provides a more sensitive indication than the most traditional physiological or morphological endpoints. The following article entitled “Risk of waterborne illness via drinking water in the United States” reviews current threats to the water supply in the US, caused by pathogens, provides estimates of total drinking water illness, and suggests approaches for risk reduction, with a critical assessment of the water treatment at the point-of-use.

The last article on “Biological removal of nitrogen from wastewater” presents a critical comparison of diverse conventional and novel technologies to enhance nitrogen removal, including simultaneous nitrification and denitrification, shortcut nitrification and denitrification, anaerobic ammonium oxidation, aerobic deammonitrification, completely autotrophic nitrogen removal over nitrite and oxygen-limited autotrophic nitrification-denitrification processes. The key control parameters are discussed and several research needs, particularly on the characterisation of functional microorganisms, are highlighted.

Sustainable Management of Sediment Resources, Sediment Quality and Impact Assessment of Pollutants, edited by Damia Barcelo and Mira Petrovic, Amsterdam, NL, Elsevier, 2007, 333 pp., EUR 114.49, ISBN: 978-0-444-51962-7

The present book focuses on the results and discussions of four workshops organised within the European Sediment Research Network (SedNet) with the aim of looking at the complex factors that determine the behaviour (e.g., bioavailability, binding) and fate (e.g., degradation) of contaminants in sediments, the existing tools and approaches for evaluating the risk of sediment pollution, and identifying the gaps of knowledge.

The volume includes sections on:

- Sampling of sediment and suspended matter.
- Characterisation of contaminants in sediments — effects of bioavailability on impact.
- Chemical analysis of contaminants in sediments.
- Biological analysis (bioassays, biomarkers, biosensors).
- Effect directed analysis and toxicity identification evaluation.
- Benthos sediment quality assessments.
- Modelling of pollutant fate and behaviour in bed sediments.
- Sediment quality guidelines and weight of evidence assessments.
- Soil protection, sediment monitoring and key recommendations.

Besides the general aspects of chemical analysis and bioassays that are covered in the book, special emphasis is given to the application of Toxicity Identification Evaluation (TIE) procedures for the detection of effects of contaminants and establishing Sediment Quality Guidelines (SQGs).

Although most of the information can be found in classical textbooks, brought together in one source this volume will be of interest to a wide audience, from students at the graduate level, to experienced researchers and laboratory personnel in academia and industry involved in sediment pollution monitoring and, more particularly, in developing integrated risk-based management strategies of river basins and coastal waters.

Analysis, Fate and Removal of Pharmaceuticals in the Water Cycle, edited by Mira Petrovic and Damia Barcelo, Amsterdam, NL, Elsevier, 2007, 600 pp., EUR 205, ISBN: 978-0-444-53052-3

This book discusses state-of-the-art analytical methods for trace determination of pharmaceuticals in environmental samples, including advanced methodologies for sample preparation of aqueous and solid samples, clean-up protocols and analysis, while reviewing the fate and occurrence of pharmaceuticals in the water cycle (elimination in wastewater and drinking water treatment), including latest developments in the treatment technologies.

The first chapter deals with the general introduction of the problem of pharmaceuticals as environmental contaminants indicating their sources and management options. The second chapter comprises the largest part of the book and is devoted to the analysis of pharmaceuticals and consists of eight sub-chapters dealing with modern analytical techniques for the unequivocal detection of all main classes of pharmaceuticals (antibiotics, anti-inflammatory drugs, β -blockers, lipid regulating agents, sex hormones, X-ray contrast agents and psychiatric drugs) in liquid (wastewater, surface, ground- and drinking water) and solid matrices (soil, sediment and sludge). The chapter is mainly devoted to hyphenated mass spectrometric methods such as LC-MS and LC-MS-MS and GC-MS. Moreover, sample preparation methods are thoroughly evaluated for all groups of pharmaceuticals including their major metabolites. Finally, one of the sub-chapters addresses the application of bioassays and biosensors for the analysis of pharmaceuticals in the environment. The third chapter gives an overview on the occurrence in the different aquatic compartments (wastewater, surface and drinking water), soils and sediments (riverine and estuarine) and sewage sludges, as well as the transformation processes in the environment, including photolysis and other abiotic processes. A final sub-chapter

provides an overview on acute and chronic toxicity data as well as on environmental risk assessment. The fourth chapter deals with the removal of pharmaceuticals in waste- and drinking-water treatment, including discussions on biotic and abiotic removal mechanisms, and innovative treatment technologies such as membrane reactors and advanced oxidation processes. Finally, the fifth chapter summarizes the current state of the art in the field and outlines future trends and research needs.

Overall, the book is certainly timely since the occurrence of pharmaceuticals in the aquatic environment has been recognised as an emerging issue. It will certainly be of interest to analytical chemists and environmental scientists working in the field and also to toxicologists, engineers, wastewater managers, risk assessors, and policy makers, as well as to newcomers who want to learn more about this new contamination problem.

Passive Sampling Techniques in Environmental Monitoring, edited by Richard Greenwood, Graham Mills and Bran Vrana, Amsterdam, NL, Elsevier, 2007, 486 pp., EUR 180, ISBN: 978-0-444-52225-2

Passive sampling can provide an inexpensive means of obtaining a representative picture of the environmental quality over a period of time, even where levels of pollutants fluctuate due to discontinuous discharges or seasonal variations, such as for the application of pesticides.

This book brings together a significant body of information on passive sampling, the performance of a range of devices for the sampling of metals, and non-polar and polar organic chemicals in air and water. It also highlights the underpinning physicochemical models that describe the behaviour of these systems in the various environmental compartments and discusses the strengths and weaknesses and the range of applicability of the technology.

The book is divided in four parts devoted to air, water and soil/sediment sampling and to ecotoxicology and biomonitoring. Although the devices have many aspects in common, they have been allocated to different sections in order to make the book easier to use when looking for specific types of application. Each part starts with a presentation of the theoretical aspects, including the fundamental question of the calibration procedures, and follows with a description of the different sampling devices for organic and inorganic pollutants. These include Solid phase Microextraction (SPME), Semi-Permeable Membranes (SPMD), Diffusion tubes/3M badges (dosimetry), Diffusion Gradient Devices, Polar Organic Compound Integrative Sampler (POCIS), Membrane Enclosed Sorptive Coatings (MESCO) and biomonitoring organisms, like conifer needles, mosses and mussels.

The book will be an essential source of information for practitioners in the field of water and air quality monitoring and potential end users, among them researchers, analytical chemists, environmental toxicologists and those employed in regulatory and enforcement bodies (including national environment agencies, and health and safety bodies), and water companies.

Analysis of Environmental Radionuclides, edited by Pavel Povinec, Amsterdam, NL, Elsevier, 2008, 538 pp., EUR 199, ISBN: 978-0-08-044988-3

This book presents the current knowledge on methods of assessment of radionuclides in the terrestrial and marine environments. The book starts with an introduction to the development of statistically based sampling strategies to study radionuclides in the

environment, followed by the description of sampling techniques and pre-concentration of samples. The recent developments in radiochemical separation methods using chromatography resins for the treatment of actinides, transuranics and other groups of radioelements are also described. Recent progress in environmental studies is documented by the analysis of ^{137}Cs , ^{90}Sr and Pu isotopes in the seawater column (Chapter 4). Monte Carlo simulations of detector background characteristics have been an important pre-requisite when designing low-level counting systems (Chapter 5) also important when working in laboratories situated hundreds of metres underground, where radioactive purity of construction materials and radon concentration in the air become dominant factors controlling the detector background (Chapter 6). Analytical methodologies for long-lived environmental radionuclides, such as AMS (accelerator mass spectrometry), are extensively described in Chapters 7 and 8, for light and heavy elements, respectively. However, the most widely used mass spectrometry technique for this purpose has been ICP-MS, as documented in Chapter 9. Other highly sensitive mass spectrometric techniques, suited for specific types of analysis, such as TIMS (thermal ionization mass spectrometry), RIMS (resonance ionization mass spectrometry) and SIMS (secondary ionization mass spectrometry), as well as particle sensitive analysis using scanning electron microscopy (SEM) and synchrotron-based techniques are covered in Chapters 10 and 11. Neutron activation analysis (NAA) has been contributing in specific applications with long-lived radionuclides, and usually this is the only alternative technique for certification of reference materials (Chapter 12). Finally, *in situ* techniques represent a new approach to analysis of environmental radionuclides and these have been recently widely applied for surface monitoring of radionuclides using either mobile gamma-ray spectrometers, helicopters and aeroplanes (Chapter 13) or measurements carried out under water, e.g., for radionuclide mapping of seabed sediments and/or stationary monitoring of radionuclides in the aquatic environment, as described in Chapter 14.

Although remarkable progress has been made in detection techniques over the past 10 years, no other book is available covering aspects of environmental radioactivity measurements. Therefore, it will be of reference for graduate and postgraduate courses on the behaviour of radionuclides in the environment, as well as for researchers and professionals who are using radionuclides as tracers for studying environmental processes, and those working in the areas of marine radioactivity and radiation protection and radioecology, to mention just a few.

Persistent Organic Pollutants in Asia, edited by An Li, Shinsuke Tanabe, Guibin Jiang, John Giesy and Paul Lam, Amsterdam, NL, Elsevier, 2007, 842 pp., EUR 150, ISBN: 978-0-08-045132-9

This book is a compilation of the most current knowledge on the sources, distributions, transport and fate of selected POPs from the rapidly developing regions of Asia. The publication is both timely and useful, because, on one hand, the rapid economic development in Asian countries has caused increasing concern among scientists and administrators about the effects of various persistent pollutants on human health and the ecosystem, and, on the other hand, because the recent entering into force of the Stockholm Convention on POPs requires a continued assessment of the information that, in this case, is scattered among numerous journals and documents, many of which are in native languages.

POPs covered by this book include polychlorinated biphenyls (PCBs), polychlorinated dibenzo-p-dioxins and furans (PCDD/Fs), polybrominated diphenyl ethers (PBDEs) and other brominated organic pollutants, pesticides, polycyclic aromatic hydrocarbons (PAHs) and their derivatives, perfluorinated organic compounds, alkylphenols, as well as other persistent organic chemicals of high concern, such as some organometallic compounds. Although the book extensively reviews the levels of these compounds in the different environmental compartments, it also includes descriptions and discussions of current governmental policies, monitoring and surveillance programmes, history of manufacturing and applications, emission sources, impacts on human health, measured or modelled transport and transformation, and cross-boundary transport in these countries.

Written by leading scientists, Part I covers East Asian countries, with chapters on POPs in Japan, China and Korea. Three chapters describe, specifically, areas of high environmental and economical importance, such as Hong Kong and the Pearl River Delta of China. Part II is devoted to Southeast Asia, including India, Thailand and Vietnam. Part III covers the Pacific Countries, namely Philippines, Indonesia, Malaysia and Singapore. Although not an Asian country, a chapter on Australia is also included because of its location in the region and its relevance with regard to the long-range transport of some POPs. In the last Part, S. Tanabe provides an excellent regional perspective for POPs in the Asian countries considered in the book.

The book certainly constitutes the most comprehensive overview on the subject and will serve as a reference for environmental researchers, various international and environmental organisations, and government decision makers seeking information on POPs in Asia or on a global scale.

J. Albaigés
CID-CSIC, Barcelona, Spain
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