

This article was downloaded by:

On: 18 January 2011

Access details: Access Details: Free Access

Publisher Taylor & Francis

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



International Journal of Environmental Analytical Chemistry

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713640455>

A Review of: “DETERMINATION OF ORGANIC SUBSTANCES IN WATER VOLUME I by T.R. Crompton, Wiley Interscience Publication, John Wiley & Sons, New York, 1985.”

To cite this Article (1986) 'A Review of: “DETERMINATION OF ORGANIC SUBSTANCES IN WATER VOLUME I by T.R. Crompton, Wiley Interscience Publication, John Wiley & Sons, New York, 1985.”', International Journal of Environmental Analytical Chemistry, 26: 3, 319 — 320

To link to this Article: DOI: 10.1080/03067318608077123

URL: <http://dx.doi.org/10.1080/03067318608077123>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Book Reviews

**DETERMINATION OF ORGANIC SUBSTANCES IN WATER
VOLUME I** by T.R. Crompton, Wiley Interscience Publication,
John Wiley & Sons, New York, 1985.

This book represents the first two volumes on the analysis of organic pollutants (including organometallics, vol. 2). This first volume contains four chapters on Hydrocarbons, Detergents, Pesticides and PCBs and Herbicides.

Chapter 1, on hydrocarbons and PAHs, introduces the reader to GC-MS, with some examples such as C-20-, C-40 acyclic isoprenoids and C-27 steranes and triterpenes, for characterization of oils in the marine environment. Infrared and Raman spectroscopy are described as techniques to reveal the relative amount of aliphatic, olefinic and aromatic compounds. TLC, for separation and determination of PAHs, and HPLC and UV, visible and fluorescence detection, is quite extensively documented and shows the applicability of these techniques in this field.

However, in this first chapter the use and application of capillary GC has been somewhat neglected. A description of different injection modes and new liquid phases for the more polar hydrocarbons is also missing.

Chapter 2, on detergents, deals with the available analytical methods, such as AAS, spectrophotometric methods based on the use of methylene blue and GC of alkylbenzene sulfonates as their methylsulfonate derivatives. HPLC is mentioned for the determination of anionic and non ionic surface active agents in water.

Unfortunately HPLC, as a most powerful technique in detergent analysis has been treated very briefly only. More recent developments in post-column reaction detectors or the use of ion-pair formation for separation and detection purpose have been omitted. No mention is made of LC-MS work with non-ionic surfactants.

Chapter 3, on pesticides and PCBs, shows the application of GC as a major technique with several extraction and clean-up procedures, as well as the stability of different pesticides in water samples. Examples are shown for the analysis of organochlorine insecticides, carbamates, organophosphorous pesticides and PCBs.

Again, there is a lack of documentation on capillary GC used widely for this group of compounds. Head space techniques, particularly important for volatile organohalogen compounds, have been treated insufficiently. In addition, more recent clean-up and trace enrichment techniques based on the use of solid-liquid extraction for off-line and on-line handling of samples is not discussed adequately. No mention is made of recent HPLC developments particularly on the detection side for this group of analytes.

Chapter 4, on herbicides, describes the use of GC and GC-MS, with previous derivatization, in the analysis of different types of compounds such as tryazines, ureas and phenoxyacetic acids. As in Chapter 3, there is a lack in the description of HPLC methods for instance via direct derivatization for the phenylureas followed by UV detection or the use of on-line trace enrichment techniques with electrochemical detection etc.

As general comments the referees feel that sample handling, which is still a major bottleneck in the analysis of trace organics in water, has not been given enough attention. The aspect of automation for the analysis of large series of samples should also have been given more attention; a critical comparison between off-line and on-line clean-up procedures would have been useful.

A major complaint is also that the book only covers references up to 1980, which renders it almost out-of-date at the time of appearance.

To summarize, while this book might be considered a useful starter for the novice in water analysis of organics it might hardly be of interest to the specialist in the field.

D. BARCELO
R.W. FREI