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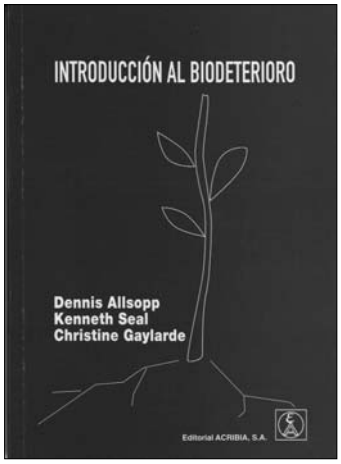

Introducción al biodeterioro

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Zaragoza, Spain
240 pp, 17 × 24 cm
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Translation of *Introduction to Biodeterioration*, 2nd edn. The Press Syndicate of the University of Cambridge, Cambridge, UK, 2004. Translated by D.A. Moreno.

For the past 40 years, we have been using H.J. Hueck's definition of biodeterioration as "any undesirable change in the properties of a material caused by the vital activities of organisms", materials being "any form of matter ... used by humankind". *Introducción al biodeterioro* is the Spanish translation of the second edition of a unique book on this subject, *Introduction to biodeterioration*, by Dennis Allsopp, Kenneth Seal and Christine Gaylarde. The excellent translation has been made by Prof. Diego A. Moreno, from the Technical University of Madrid, president of the Biodeterioration and Biodegradation Group of the Spanish Society for Microbiology.

This book is a broad overview of many different facets of biodeterioration, and it consist of six chapters. Chapter 1, the introductory chapter, begins by defining biodeterioration and the often associated term of biodegradation. It includes a classification of the physical, mechanical, chemical, and aesthetic alterations (fouling or soiling) that may take place. The core of the book is made up by the following three chapters, divided according to the different types of materials that can undergo biodeterioration. Causal agents (such as bacteria, fungi, algae, lichens, insects and other invertebrates, birds, mammals and plants) are largely covered and further indexed at the end of the book.

Chapter 2 focuses on natural materials. The first examples that come to mind are the problems that might arise with foodstuffs and stored agricultural products, but the chapter also discusses the biodeterioration of cellulosics such as wood, textiles and paper, animal products such as leather, wool and fur, and even stonework. Chapter 3 discusses the biodeterioration of refined and processed materials, explaining the degradation of many synthetic materials such as paint, adhesives, plastics, lubricants and fuels, synthetic rubbers, plastics, cosmetics, pharmaceuticals, metals and magnetic media. Chapter 4 deals with built environments: structures, systems, and transportation infrastructure. In most cases, problems arise from the variety of materials involved and the uses to which they are put. Examples are housing or historical and cultural buildings, and museums in particular, since they are places where special attention must be given to the objects deposited there for conservation. In general, these three chapters show the extent of biodegradation and its impact on everyday life. The whole book, particularly Chapter 3, is well illustrated with diagrams, chemical formulas, and photographs, most of which were taken by the book's authors to show the effects of biodegradation on a range of materials.

The book stresses that cases of biodeterioration must first be recognized as such in order to establish the ways such damage can be controlled and prevented. Chapter 5, on investigative biodeterioration, reviews the four stages in tackling a biodeterioration problem—determining the cause, evaluating the possible control systems, establishing the most appropriate control system, and monitoring its success. Included in the discussion are the new genetic and molecular techniques that have been incorporated into the conservator's toolkit. Finally, Chapter 6 takes a broader view of the control of biodeterioration, covering the most common physical, chemical and biological techniques and emphasizing related regulatory, environmental and safety issues.

To keep the book as clear and concise as possible, the editors have purposely avoided the use of references in the text, and have instead created a list of useful websites, references and recommended reading at the end of each chapter. The book also includes many tables that summarize the information in each section.

As the title clearly states, the book is meant as a basic introduction to this subject, to show some of the interactions between living organisms and the materials we use as seen through the lenses of environmental biology, materials science and ecology. In their preface to the second edition, the authors hope "that it will contribute to greater awareness of and interest in the topic, particularly for students and others beginning to explore this important and diverse field." Given the straightforward language and explanations, as well as some of the fascinating examples that can be found within its covers, I would also recommend this book to anyone who might be curious about biodegradation as a subject whose interest to humankind dates back to our earliest use, manipulation and possession of materials.

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