Preface

Conrado Rodríguez-Martín

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RODRÍGUEZ-MARTÍN, C. Preface. In: FERREIRA, L.F., REINHARD, K.J., and ARAÚJO, A., ed. *Foundations of Paleoparasitology* [online]. Rio de Janeiro: Editora FIOCRUZ, 2014, pp. 17-19. ISBN: 978-85-7541-598-6. Available from: doi: [10.7476/9788575415986.0001](https://doi.org/10.7476/9788575415986.0001). Also available in ePUB from: <http://books.scielo.org/id/zngnn/epub/ferreira-9788575415986.epub>.

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Preface

Writing the preface to *Foundations of Paleoparasitology*, edited by Luiz Fernando Ferreira, Karl Reinhard, and Adatao Araújo, is both an honor and a pleasure for me. It is an honor, because such prestigious and internationally renowned specialists have entrusted the task to me. It is a pleasure, because we are friends, very good friends, and sharing something as beautiful as this book with friends is always highly rewarding.

The origins of Paleopathology date back several centuries, but we can only speak of a “systematic” Paleopathology since the early 20th century, when Marc Armand Ruffer conducted pioneering studies on diseases in Egyptian mummies and introduced the technique of rehydration in mummies, still used today with some variations. Since then, tens of thousands of studies have been published around the world on ancient diseases, in addition to hundreds of books and monographs on the general theme or more specific aspects of it. In fact, even a brief review of the more recent history of Paleopathology (a field that necessarily encompasses Paleoparasitology) reveals the huge amount of books published in the last three decades on different facets of the subject: General Paleopathology, Bone Paleopathology, studies on mummies and bodies preserved by other processes, applications of molecular genetics to the analysis of ancient populations, paleoimaging, applications of Paleopathology to Forensic Science, paleohistology, etc., are just a few relevant examples of the impact of various diseases on ancient populations and their study by researchers from widely diverse geographic regions. Nevertheless, we lacked a book dedicated exclusively to one of the most important themes in the field when focusing on studies that encompass demography, population habits, ecology, and health: Paleoparasitology.

Paleoparasitology did not receive special treatment until well into the 20th century. However, the first steps had been taken long before to make a reality of the field as we know it today. The first of these steps was common to all fields that study humans in past times: the birth of modern Archaeology, or that of the archaeological method, founded by Jacques Boucher de Perthes in the mid-19th century.

Without Archaeology, those of us dedicated to the study of health and disease in ancient times would have little to do or say, because Archaeology provides us with the necessary material for our routine research. Along with the birth of modern Archaeology, a series of milestones have marked the development of Paleoparasitology. The first was undoubtedly the recognition of coprolites (a term coined by William Buckland in the early 19th century) as a source of

abundant and trustworthy information on eating habits, diseases, and ecological and demographic characteristics of ancient cultures. In the late 19th century, Harshberger signaled the potential possibilities of coprolites for analyzing ancient diets, and in 1925 Seton recognized that the shape and content of feces are indicative of the respective animal order. Netolitzky was responsible for the first rehydration techniques, perfected shortly thereafter (in the mid-20th century), first by Van Cleave and Ross, and later and more decisively by Callen and Cameron (1955, 1960), using 0.5% trisodium phosphate aqueous solution. Much more recently, refined laboratory techniques, especially DNA analysis, have given extraordinary impetus to the development of Paleoparasitology.

Numerous national and international congresses and scientific meetings in Paleopathology have been held, especially since the founding of the Paleopathology Association in the 1970s, thereby fueling publication and debate of paleoparasitological studies conducted in different parts of the planet. As for Latin America, such progress was reinforced in 2005 with the First Congress of the Paleopathology Association in South America (PAMinSA) in the city of Río de Janeiro, with the presence of highly representative groups of scientists from all over the world. I should not and cannot fail to mention an important event in the development of Paleoparasitology in Latin America, in 2004, namely the First International Course on the specialty held at the Quequén-Necochea campus of the Universidad Nacional del Centro de la Provincia de Buenos Aires, Argentina, headed by Ricardo Guichón and Martín Fugassa, two great personal friends and collaborators in courses and research projects in paleopathology.

Finally, this book meets the need for a single volume with abundant information, strict scientific rigor, and contributions by renowned researchers. To be fair, we should highlight that before this magnificent work was published, the authors had already released other related works: *Paleoparasitologia no Brasil* [Paleoparasitology in Brazil] (1988), edited by Ferreira, Araújo, and Confalonieri; *Paleopatologia e Paleoepidemiologia: estudos multidisciplinares* [Paleopathology and Paleoepidemiology: multidisciplinary studies (1992), coordinated by Araújo and Ferreira, including articles by various specialists in paleopathology in Brazil, and recently, a more general-interest book entitled *Paleoparasitologia* [Paleoparasitology] (2008), by Ferreira, Reinhard, and Araújo. All these books, and in my opinion especially the first two, were essential for calling the attention of the international scientific community to the cutting-edge research in Brazil in the field of Paleopathology, and more specifically that of Paleoparasitology.

This book was becoming absolutely necessary, and we contend that the title may be excessively modest. "Foundations" (or "Fundamentals") is too short. The book could very well be entitled a "Treatise", since it analyzes the most current topics in Paleoparasitology. The division in four sections is highly appropriate, separating the different key aspects to make the book more comprehensible.

Thus, the first part ("Parasites, Human Hosts, and the Environment") focuses basically on the history of general observations on the different diseases, including of course parasites, thus greatly elucidating the general picture for unaccustomed readers and including a view of the field's development, besides delving into the origin of parasites of humans, parasitism, and the relations between human migrations and parasitism. The book's second section ("Parasite Remains Preserved in Various Materials and Techniques in Microscopy and Molecular Diagnosis") provides a sufficiently precise and in-depth explanation of the various techniques (light microscopy, immunology, DNA studies, to which great importance is ascribed) for paleoparasitological studies on various materials such as amber and coprolites, besides the importance of analyzing bacteria, viruses, mites, ticks, food remains, and pollen in Paleoparasitology. The third section ("Parasite Findings in Archeological Remains: a paleogeographic view") is one of the most interesting in the book and is based on studies of parasites from different parts of the planet: North and South America, Europe, Asia, Oceania, and Africa. The fourth and last section ("Special Studies and Perspectives") is divided into three chapters, of which perhaps the most interesting is that dealing with Chagas disease, highly relevant in South America due to the large numbers of infected individuals and the morbidity and mortality rates.

To carry out this monumental work, it was necessary (and this is part of the Editors' extraordinary merit) to convene international experts from diverse geographies, featuring those from Brazil, United States, Argentina, France, representing a dozen scientific institutions and more than two dozen researchers from the leading groups in paleoparasitological studies. The authors are named individually in the book itself, but we should recall that they routinely participate in the international forums where new research, new techniques, and new methods are proposed, and above all where essential information is exchanged for opening new fields in Science. In short, it behooves us to congratulate them for carrying out this grand work which (we never tire of repeating) constitutes a veritable milestone not only for expanding knowledge in Paleoparasitology, but also for further interweaving the field with that of Paleopathology.

To the Editors, we not only reiterate our congratulations. On behalf of those of us dedicated to Paleopathology, we thank them for this book, destined for success due to its contributions to knowledge on diseases in the past and their evolutionary history.

Conrado Rodríguez-Martín, M.D.

Director, Canary Islands Institute of Bioanthropology
Independent Board of Museums and Centers (OAMC), Tenerife Municipality