To look upon a mummy is to come face to face with our past. This book presents the story of mummification as a practice worldwide. Mummies have been found on every continent, some deliberately preserved as with the ancient Egyptians using a variety of complex techniques, others accidentally by dry baking heat, intense cold and ice, or by tanning in peat bogs. By examining these preserved humans, we can get profound insights into the lives, health, culture and deaths of individuals and populations long gone. The first edition of this book was acclaimed as a classic. This readable new edition builds on these foundations, investigating the fantastic new findings in South America, Europe and the Far East. It will be a 'must-have' volume for anyone working in paleopathology and a fascinating read for all those interested in anthropology, archaeology, and the history of medicine.
Mummies, Disease & Ancient Cultures
Mummies, Disease & Ancient Cultures

Second Edition

Edited by
Aidan Cockburn, Eve Cockburn and Theodore A. Reyman
To Aidan, who started it all
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Aidan Cockburn
30 May 1912 – 19 September 1981

Scholar, scientist, physician, administrator, wit, raconteur; these words, among many others, describe Aidan Cockburn. His contributions as an epidemiologist, specialist on the evolution and history of disease, and on paleopathology established him as an authority on these and other subjects long before his death in 1981. In a sense, however, words cannot capture the essence of the man. Aidan was a man of catholic interests and knowledge. He lived and worked in many countries of the world. (When I first met him his cat had travelled far more extensively than I – a fact that he found most amusing.) The world view that arose from his global work and travel experience gave him a special perspective on many of the problems regarding the evolution of disease. He was the first to introduce me to the obvious but often overlooked concept that evolutionary processes would generally lead to the attenuation of virulence in bacterial disease organisms; the organism that kills its host usually dies as well, thus natural selection will favor the disease organism that does not kill its host. This concept is crucial to an understanding of the history of disease and to the interpretation of paleopathological specimens.

Aidan’s influence on the development of paleopathology has been enormous. With Eve Cockburn, he founded the Paleopathology Association in 1973. This international and interdisciplinary organization today has a membership of more than 500. Although his great interest was in the general area of paleopathology, he became best known for his specific interest in the study of mummies. Despite this emphasis he gave enthusiastic support to all research on paleopathology. His interest in and support of the study of mummy tissues stimulated a whole new range of studies, many of which involve the latest technology and methodology in science and medicine.

Mankind may never completely eradicate infectious disease but certainly the perspectives provided or stimulated by Aidan will do much to illuminate
those factors that affect human health and provide the time perspective needed to continue the quest to minimize the effects of disease on human life. DONALD ORTNER, SEPTEMBER 1982

AIDAN COCKBURN
Preface to the first edition

Why mummies? That is the question we are often asked. How did an otherwise respectable physician and a senior member of the University of Oxford, whose field is modern language and literature, find themselves regarded as ‘the mummy experts’?

The story begins in Aidan’s early medical years. He is cursed with the ‘satiated curiosity of the elephant’s child and always wants to know ‘why’’. Why are diseases the way they are? Were they always like this? Where did they come from? Under the influence of the nineteenth-century ideas of Darwin and Huxley, he worked out a series of theories that would explain how disease organisms evolved, how they changed during the different epochs of the development of human society, and how the interaction of these two streams of evolution resulted in our current infectious disease patterns. Eve, with her nontechnical background, found herself looking at these ideas with the cold and critical eye of an outsider, then helping with the sorting and organizing of theories – and so a partnership was born.

After Aidan’s first two books on the evolution of infectious diseases (1963 and 1967), there was a hiatus of several years. Then came two casual conversations, which led to the present line of research and the present book. At a meeting of the American Association of Physical Anthropologists in Boston in 1971, Lucile St. Hoyme of the Smithsonian Institution remarked: ‘Aidan, why don’t you apply for a grant from the Smithsonian to study in some area where you could find facts to back up your theories? We have local currency funds available in at least seven countries’. She listed them, and the obvious one that would provide a fertile field for research was Egypt. Aidan applied for and received a grant to go to Egypt on a reconnaissance trip to investigate the possibility of organizing a project for the autopsy of large numbers of mummies, thus obtaining facts to back up his, until then, largely speculative ideas.

Then came casual conversation number two. Eve was talking to William H. Peck, Curator of Ancient Art at the Detroit Institute of Arts, about the projected trip. Bill asked whether Aidan had ever autopsied or in any way
EVE COCKBURN

Preface to the first edition

examined a mummy before, and when the answer was no, he suggested that Aidan might like to practice on one of those in storage in the institute’s basement. The story of this first, primitive autopsy has already been fully described (Smithsonian, November 1973); its importance lies in the idea of examining mummies in American museums rather than those in Egypt.

While in Egypt, Aidan met David O’Connor, who became a major contributor to the final program. At the Pennsylvania University Museum, where he was Egyptian curator, there were several mummies, and David invited Aidan to examine these if he needed to. The first autopsy (PUM I), conducted in Philadelphia at the university, was an unmitigated disaster. No one really knew what to do, and readers of this book will find only passing reference to the project – but it was a valuable learning experience. The media had been invited and turned up in full force, so the examination became a three-ring circus, with photographers and cameramen taking over the autopsy room; at one stage there was even a class of visiting third-graders, complete with teachers, wandering through and getting underfoot. Not an atmosphere conducive to serious scientific work!

However, three more mummies were provided by David and successfully autopsied in Detroit, with conditions strictly controlled. The Smithsonian Institution, the Detroit Institute of Arts, and Wayne State University School of Medicine collaborated in the sponsorship of these studies. The first study, of PUM II, became the basis of the Paleopathology Association. Papers presented at the symposium held in conjunction with the autopsy, which had been given the somewhat fanciful name of ‘Death and Disease in Ancient Egypt’, were printed with a covering letter of information under the grandiose title, Paleopathology Newsletter, Number 1. At that time, it really was debatable whether there would ever be an issue number two! However, the publication found an immediate audience, and so the Paleopathology Association was born. There are no association dues, no formal organization, no by-laws. The Newsletter is now a viable entity, with more than 300 subscribers in 25 countries, and it is from these that contributors to the present book are drawn. During the past 5 years, a great deal of major scientific work has been performed, all on a strictly voluntary basis. People work because they are interested, consumed by that same ‘satiable curiosity that started Aidan off in the first place. We are grateful for what their enthusiasm and energy has produced – and we hope readers of this book will feel the same.

EVE COCKBURN, SEPTEMBER 1978

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Preface to the second edition

In the twenty years since Aidan and I first started working on Mummies, Disease and Ancient Cultures, the pace of discovery and change has been remarkable. We started from the 1971-75 series of autopsies carried out by our little group on Egyptian mummies, then decided to be adventurous by adding Peruvian. As we continued working, we were surprised to realise how ubiquitous the practice was, and so we continued to add new reports as we went along. Although we were not aware of it at the time, most of the types of mummification described in the first edition had actually appeared in Pettigrew’s pioneering 1834 book – as we were humbled to discover some time later.

What a huge change occurred during the next few years! When Cambridge University Press decided in 1995 that it was time for an update, Theodore Reyman (my new co-editor) and I found ourselves suffering from an embarras de richesses. Some of the chapters needed very little revision. As far as ancient Egypt is concerned, the facts about mummification practices have been well documented for many years, and so chapter 1 stays virtually untouched. There have been some interesting discoveries about diseases there in ancient times, but A. T. Sandison’s classic account (chapter 2) needed no serious change, just updating with additional material. Chapter 3 on dentistry and dental practices reflects the author’s ongoing research during the past twenty years, told from today’s vantage point, and the four elaborate case reports describing the autopsies of Egyptian mummies carried out by the founders of the Paleopathology Association and their colleagues (chapters 4, 5, and 6) have been condensed to some extent. This was done by eliminating details that do not need to be explained to today’s audience; many of the techniques, brand new in mummy studies at that time, are now standard practice in the examination of ancient bodies.

With the existing chapters on mummies of the Americas and mummies of the world, several needed to have only small amounts of information added to bring them up to date, but in other instances, we were overwhelmed. Given
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Preface to the second edition

the constraints of keeping the most important parts of the original book (and staying within manageable size), it proved impossible to include all the new material we would have liked. For example, in chapter 14 we have included a full description of only one kind of Chinese mummy, although there are others. In chapter 12, we have omitted the extremely interesting religious mummies of Italy, choosing instead to concentrate on the remarkable series of investigations carried out by Gino Fornaciari and his team on members of the Italian aristocracy, mumified by a method that seems to have been unique to that part of the world. (Anyone who has seen the three and a half hour uncut version of The Leopard will remember the scene where the Duke looks into the gentlemen’s retiring room at the ball, an event at which he is constantly reminded of his own mortality; the collection of chamber pots that adorn the floor would have been a chilling reminder of his future fate.) As Christopher Parish so presciently said, when asked whether he was in favor of bringing out a second edition, ‘the subject really deserves a brand new book’.

One major change that has occurred, a change detrimental to paleopathological studies of any human remains, is the drive for ‘repatriation’, i.e., the return of bodies kept in anthropology collections to their descendants for reburial, plus a refusal to allow any examination by scientific methods. There is no doubt whatsoever that in the past human remains from indigenous peoples were carelessly handled without regard to the sensitivities of their descendants, but now serious researchers are paying the price. It is no use, as the Paleopathology Association found out, to list all the great advantages that will accrue from the study of ancient human remains; in many parts of the world, the native peoples have been too deeply hurt by past lack of respect for their feelings to believe they have any duty to give up the bodies of their ancestors in order to achieve hypothetical medical advances in the future. Countries that have suffered from this drive towards repatriation include the United States, Israel, and particularly Australia. It proved impossible, for example, to get permission to reprint the figures that showed actual aboriginal bodies in the chapter on Australian mummies, and the authors of the chapters on mummies from the southern United States and Alaska voluntarily withdrew their photographs of human bodies, in deference to the sensibilities of the descendants concerned.

On the other hand, in other parts of the world that have remained unhindered by such restraints, mummy research has proliferated. In the first edition, Guanche mummies appeared as a less than two page mention, cobbled together from papers published by Ernest Hooton and Don
Brothwell. From that tiny beginning, which led me to visit the Museo Antropológico y Etnográfico in 1985 while on holiday in the Canary Islands, there developed a major research program (the Cronos Project). This in turn sparked the formation of a World Committee on Mummy Studies, the first World Congress on Mummy Studies in 1992 in the Canaries, the second World Congress on Mummy Studies in 1995 in Cartagena, Colombia, and the Third, now scheduled for 1998 in Arica, Chile. The wealth of new material and new research discovered through these international meetings truly boggles the mind. All these programs have benefited from the tremendous advances in technology that have developed during the past 20 years. We need mention only the magic words aDNA (ancient DNA), CT (computed tomography) scanning, paleonutrition studies, and trace element analysis to give an idea of the vistas that are opening up in this discipline. These advanced investigative techniques will be dealt with in greater depth in chapter 16.

Finally, I must acknowledge the huge debt I owe to Theodore Reyman, my co-editor, without whose willingness to take on the job I would never have considered agreeing to this second edition. We are deeply grateful to our authors, many of them Paleopathology Association members, who have shown tremendous enthusiasm for the project. I have also received generous help and co-operation from many other members, but in particular, I must mention Patrick Horne, who made excellent suggestions in the early planning stages and was a valuable resource for references, especially in dealing with South American subjects. Arthur Aufderheide was unfailingly courteous and helpful when phoned about a looming crisis – even during the time that he himself was struggling to meet a deadline for his own Cambridge University Press book. I could always rely on finding Donald Ortner at his desk by 7 am, ready to field my phone calls, Charles Merbs was a great consultant on numerous details that escaped me, and Keith Manchester joined in the review and discussion of the original outline. Takao Suzuki helped immeasurably, first in re-establishing contact with Kiyohiko Sakurai, whose original chapter on Japanese mummies (chapter 14) needed no change, then by finding the right person to write an addendum. We are deeply grateful to Kenneth Werner, commissioning editor for the first edition, who offered invaluable advice based on his past experience, but with an outsider’s impartiality.

I would also like to acknowledge two people who were not able to participate. It was with great regret that we accepted Graeme Pretty’s forced withdrawal due to serious health problems. His knowledge and understanding of mummification among the aboriginal peoples of Australia and Melanesia is
EVE COCKBURN

Preface to the second edition

unsurpassed and irreplaceable, and even without an update, his original chapter, co-authored with Angela Calder, is fascinating. We were also sorry that Svante Pääbo was unable to discuss his seminal work on aDNA in mummies, though delighted to know that (to quote) ‘the first edition of your book was a great inspiration to me when I started my own work’. Let us hope that this second edition can be as stimulating.

EVE COCKBURN, MARCH 1997

REFERENCE