





> This book is dedicated to our children, Suran, Lakmalie, Joel and Trishe who have joined us in the medical fraternity.



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978-1-900-15139-9 - Tropical Infectious Diseases: Epidemiology, Investigation, Diagnosis and Management Ranjan L. Fernando, Sujatha S. E. Fernando and Anthony S.-Y. Leong

Frontmatter

More information

# TROPICAL INFECTIOUS DISEASES EPIDEMIOLOGY, INVESTIGATION, DIAGNOSIS AND MANAGEMENT

 $\mathbf{B}\mathbf{y}$ 

# RANJAN L. FERNANDO

MBBS, MD, MRCP (London), FRCP (Edin), FACEM, FRACP Senior Consultant Physician, Military Hospital, Liverpool, NSW Former Director of Accident and Emergency Medicine

The Liverpool Hospital and Senior Lecturer, University of NSW, New South Wales, Australia

# SUJATHA S. E. FERNANDO

MBBS, MSc (Lon), FRSTM&H, DCP, FRCPA, MIAC Senior Consultant Pathologist, Quinn Pathology Services, Kensington, NSW Former Director of Anatomical Pathology South Western Area Pathology Service Liverpool and Senior Lecturer, School of Pathology University of NSW, New South Wales, Australia

### **ANTHONY S.-Y. LEONG**

MBBS, MD (Adelaide), FRCPA, FRCPath, FCAP, Honorary FHKCPath, FHKAM (Pathol) Medical Director, Hunter Area Pathology Services, Newcastle Professor and Head, Discipline of Anatomical Pathology University of Newcastle, New South Wales, Australia





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# **PREFACE**

Young maidens of AD 1600 were well aware of the dangers of infectious diseases. Rosalind had asked:

'Alas, what danger will it be to us maids as we are to travel so far?' (William Shakespeare, As You Like It, Act 7, Scene 3).

The need for preventive measures was reflected by the warning:

'The girls of Italy take heed of them' (idem, All's Well That Ends Well, Act 2, Scene 1).

The advent of relatively inexpensive air travel, transcontinental trains and ocean liners has made international travel within the reach of many. Today, two-thirds of travellers visit the tropics and are exposed to diseases not prevalent in their normal habitat. In geographic terms, the 'tropics' is confined to latitudes 23° 27′ N (Tropic of Cancer) and 23° 27′ S (Tropic of Capricorn); however, in relation to infectious diseases, the 'tropics' includes South East Asia, Korea, Japan, Northern Australia, the tropical belts of the Pacific, Central America and the Caribbean. Tropical Africa embraces the entire continent with the exception of South Africa, and the Mediterranean littoral from Spain to Israel is also part of the 'medical tropics'.

Most of the tropical infections are parasitic although there are some bacterial, rickettsial and viral infections that are endemic to the tropics and must also be considered. Zoonotic parasites form a substantial proportion of parasitic diseases in humans and the list of parasite species which infect man in both advanced and less-developed regions of the world are made up of more than 300 species of helminths alone. With the emergence of immunodeficiency conditions including the acquired immunodeficiency syndrome (AIDS), poorly known pathogens previously thought to be of minor importance, such as cryptosporidia and microsporidia, have emerged as important causes of significant human disease. Some parasites may be common but because their adult or larval stages are sequestrated in the tissues of the host and consequently rarely encountered, they are often not readily recognized or identified. The clinical manifestations of these infections may be common and non-specific, or they may rarely be completely exotic and defy recognition.

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### PREFACE

As the world becomes smaller through the efficiency and speed of modern travel, people may become exposed to and contract a wide variety of infections normally prevalent in far-off places. Such diseases are diagnosed only when the travellers return home. Tropical infections may enter temperate countries through their immigrant hosts and these often only become clinically manifest after the hosts arrival in their newly adopted country. In addition, people who have exotic tropical food preferences may be exposed to infections endemic to the tropics.

This book provides coverage of tropical diseases due to parasites including protozoa, nematodes, trematodes, cestodes, acanthocephala and arthropods. It also includes bacteria, rickettsia and viruses common to the tropics. It discusses the epidemiological and clinical aspects of each tropical infectious disease in detail and illustrates the biology and life cycles of the infectious organisms and the pathology caused. The goal of providing a comprehensive coverage is completed by the inclusion of treatment aspects for each disease, making this book suitable for the general practitioner, specialist clinician, parasitologist, pathologist, technician, researcher and student who needs to identify and treat infectious tropical diseases. Above all, the reader is reminded that the question 'Quo vadis? Unde veni?' (Where have you been. And when?) must be asked when taking a clinical history.

R. L. F. S. S. E. F. A. S.-Y. L. June, 2000

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# **FOREWORD**

I have been a clinical colleague of the Fernandos for over ten years in the South Western Sydney Area Health Service and watched with admiration the production of this very useful publication. Both authors qualified in Sri Lanka with honours, obtaining distinction in parasitology. Ranjan had his post graduate physician's training in Colombo and subsequently in Edinburgh and Leeds. He returned to Sri Lanka and was consultant physician treating many patients with tropical diseases. He emigrated to Australia where he brought his expertise to the Emergency Department, Liverpool Hospital Sydney including teaching and training of staff.

Sujatha completed her Internship at Leeds General Infirmary UK. In Sri Lanka she was in charge of the Medical Entomology/Parasitology Department at the Medical Research Institute in Colombo where she contributed to many research projects. She was awarded a W.H.O. Fellowship to the London School of Tropical Medicine and Hygiene where she obtained her MSc with Distinction. Subsequently she trained as an anatomical pathologist in Sydney. She has conducted many lectures, tutorials and workshops, some jointly with her husband, both nationally and internationally at the invitation of learned colleges and scientific societies. Preparation for these is a major factor in producing this book.

Professor Tony Leong is an author of international standing with numerous publications. He helped to make this focused and readable, with up to date referencing and critical review of each chapter.

I am sure that healthcare personnel including medical microbiologists, infectious diseases physicians, nurses, anatomical pathologists, haematologists, parasitologists and general practitioners involved in the diagnosis and treatment of tropical infectious diseases will find this book very valuable.

Rosemary Munro
MBBS, MRCP, FRCPA, FRCPATH, DipBACT, FASM
Director and Associate Professor
Department of Microbiology and Infectious Diseases,
South Western Area Pathology Services and University of New South Wales.
Australia

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We also acknowledge the contribution made by Suran Fernando, BSc (Med), MBBS (Hon), Medical Registrar in Immunology, St Vincent's Hospital, Sydney to the chapter on tuberculosis.



# GENERAL INTRODUCTION

Parasitic and tropical diseases continue to be a significant cause of morbidity and mortality in many countries. In the past they were considered to be only the problems of developing tropical countries, but this is no longer true. With the ready accessibility of rapid travel and the continuous movement of migrants and refugees, often across continents, tropical infectious diseases are a global problem and can pose diagnostic difficulties in countries remote from the site of the endemic disease. Besides international travel and the influx of migrants and refugees into the more affluent countries of the West, the extensive use of immunosuppressive therapy and the advent of the acquired immunodeficiency syndrome (AIDS) have contributed to the prevalence and increasing incidence of tropical infectious diseases in temperate countries. Unfortunately, this area of clinical medicine is relatively neglected in medical curriculum and health professionals in many developed countries receive limited instruction in parasitic and infectious tropical disease. This deficiency is reflected in the failure to include appropriate tropical infectious diseases when considering the differential diagnoses of various clinical presentations. Often, it is the surgical or autopsy pathologist who ultimately renders the unsuspected diagnosis. For example, a diagnosis of amoebic abscess or hydatid cyst in the case of the clinically suspected carcinoma of the liver, toxoplasmic lymphadenitis for the suspected malignant lymphoma, giardiasis for coeliac disease and toxocariasis for retinoblastoma. In addition, opportunistic infections such as pneumocystosis, toxoplasmosis and strongyloidiasis are frequently encountered in the setting of the immunosuppressed patient. Parasitic diseases such as malaria remain one of the major fatal diseases in the world. In Australia, a developed country, malaria is an imported disease and yet more than 1000 cases are diagnosed a year and hydatid disease remains common.

There have been many new developments both in the diagnostic aspects and treatment of parasitic and tropical diseases. While a parasitologist may be very familiar with the life cycle and structure of the parasite, s/he may not be fully cognisant of the variations in clinical presentation and management. It is the aim of this book to provide a comprehensive coverage of all aspects of tropical infectious diseases to help the broad spectrum of health professionals in the diagnosis and treatment of these diseases.

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# GENERAL INTRODUCTION

Detailed discussion of the epidemiology, clinical features, diagnosis, parasitology, microbiology, pathology, treatment and prevention of each tropical infectious disease will be supplemented by illustrations to provide easy reading and reference. Because of the limitation of space, coverage cannot be exhaustive, but some diseases such as malaria, tuberculosis and hydatid disease will be described in greater detail because of their relative importance. Illustrative cases are included at the ends of the relevant chapters.

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