

**SYMPOSIUM  
OF  
TUBERCULOSIS**

**EDITED BY  
F.R.G. HEAF**

# SYMPOSIUM OF TUBERCULOSIS

*Edited by*

F. R. G. HEAF

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## FOREWORD

It was Laennec who first demonstrated 'the one-ness or unity of tuberculous matter. Nowadays it is not always easy to remember that tuberculosis is a systemic disease with local manifestations. It is hoped, therefore, that a book which deals with all the most prevalent forms of the disease will be of value in emphasizing the unity of tuberculosis. At the same time there is an advantage, particularly to those who are not within easy reach of a medical library, to have detailed information in one volume on the main aspects of the disease.

Tuberculosis has declined in many countries in a remarkable way, but it is still of considerable clinical and epidemiological importance in the United Kingdom, and now that malaria is being controlled it is becoming the major public health problem in the majority of tropical and sub-tropical countries. This Symposium has been compiled for the use of all students, both undergraduate and postgraduate, and particularly for those physicians and surgeons in countries where the tuberculosis morbidity and mortality rates are still high. Consideration has been given to the treatment of the disease in countries where surgical facilities are limited and where the induction of an artificial pneumothorax or a pneumo-peritoneum must remain a method of treatment. In these countries, too, a sound knowledge of preventive measures including the use of B.C.G. is essential, as well as the need for an efficient after-care scheme. These subjects have been dealt with comprehensively, with great attention to practical details. A chapter has been devoted to tuberculosis in the tropics in which India has been selected as a country in which the disease presents all the problems, both in magnitude and severity, that may be met in any part of the world, but where a determined and most praiseworthy effort is being made to prevent the spread of infection and to treat those with active lesions.

A large section of the book has been devoted to non-respiratory tuberculosis, which, although mainly under the surveillance of the orthopaedic surgeon, is a subject of great importance to every chest physician. The amount of disablement caused by bone and joint tuberculosis in oversea countries is very great, so the chapter dealing with this subject should be of value to the general physician and surgeon, as well as the specialist in phthisiology. The authors of the chapter on non-respiratory tuberculosis have put forward theories and methods of treatment which, although they may give rise to criticism, will certainly stimulate interest in this important aspect of tuberculosis.

A chapter on bovine tuberculosis has been included with the intention to stress its importance in relation to human tuberculosis and to make both medical and veterinary persons realize how susceptible animals are to the disease, as well as their importance as carriers of the infection—a subject that has had far too little attention in the past.

Tuberculosis in industry also has still to be more fully investigated. The account of the historical developments and the organization of recent surveys should be known by all industrial medical officers to help them to deal with the tuberculosis that will be found among employees under their care.

In a work covering so wide a field, it has not been possible to eliminate conflicting

opinions. In fact, there would have been a drab dullness about the book if all the authors had had the same views on pathogenesis and treatment of the disease. As the book is intended to promote discussion as well as to be instructive uniformity of views has purposely not been achieved or desired.

Although every effort has been made to include the most recent information, the time lag between the correction of the proofs and the final publication unavoidably means that reports are issued and new work is published, which unfortunately cannot be included in this work.

In producing this work the authors and the editor are greatly indebted to many authorities for giving permission to publish illustrations and to make references to previous work. Many of these authorities and sources are acknowledged in appropriate places in the text, and a number of individual acknowledgements are given below. The authors and the editor wish to express their grateful thanks to all who have so kindly helped them to write this Symposium of Tuberculosis, in particular to the publishers who have given every possible assistance at all times.

September, 1956

F.H.

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CHAPTER I

INTRODUCTION: A GENERAL SURVEY

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*by F. R. G. Heaf*





When Robert Koch discovered the tubercle bacillus and proved that it was the cause of the disease known as tuberculosis, many physicians thought then that the way lay open to its cure and eradication. Over seventy years have passed during which time more has been written about the tubercle bacillus and its effects than on any other living organism, except man himself. Societies and associations have been formed, special legislation has been passed, vast sums of money have been devoted to treatment and thousands have given the whole of their lives to the study and research of the subject. That progress has been made nobody will deny, but we are still far from solving the many problems that this mycobacterium presents.

In 1948 Lissant Cox asked the question 'Whither Tuberculosis?' and again in 1952 it was asked by Drolet and Lowell. These distinguished authorities have not given us the answer, although they helped by giving a clear and concise summary of the situation as they found it at the time of writing.

In the vast quantity of information that has been collected over the past fifty years, certain facts can be extracted which are generally accepted as a basis on which we can build our theories and also our practical approach to tuberculosis problems. At the beginning of this Symposium, it is opportune to attempt to summarize these facts.

## THE ACCEPTED PREMISES OF TUBERCULOSIS

- (1) The disease is caused by the organism *mycobacterium tuberculosis* without which the disease will not occur. The human and bovine types are pathogenic to man, but the majority of lesions are caused by the human type.
- (2) The most frequent habitat of the organism outside the human body is sputum or saliva of man, and to a lesser extent the milk of animals suffering from the disease.
- (3) The organism is killed by heat, sunlight and certain chemicals.
- (4) Man possesses an inherent resistance to the infection, but this varies in different individuals.
- (5) A tissue sensitivity to tuberculo-protein develops a few weeks after infection and can be measured by the skin reaction to tuberculin.
- (6) This sensitivity indicates resistance to infection, but absence of sensitivity does not necessarily mean absence of resistance.
- (7) Recovery from a primary infection produces a certain degree of acquired resistance to subsequent infections.
- (8) Healing takes place by fibrosis and calcification and can occur in one part of the body whilst the disease progresses in another.
- (9) Infants and young adults are most susceptible to the infection but tuberculosis morbidity rates are high in the older age groups in males.
- (10) Radiological examination is the best way to discover early disease and to control treatment.
- (11) The incidence of the disease is closely related to social and economic conditions.
- (12) The spread of infection is directly related to the degree of contact with infectious persons.
- (13) The mortality rates have fallen in almost all countries in the world but the incidence of the disease remains high.
- (14) The removal or closure of a cavity with a draining bronchus is essential for recovery.
- (15) Advances in treatment have not diminished the need for preventive measures.
- (16) The expectancy of life for tuberculous persons is greater now than in the past.