PREFACE

Health care in the affluent West has now shifted from the infectious diseases of the nineteenth and preceding centuries and the children's diseases of the early twentieth century to the problems of old age, cancer, heart disease, congenital abnormalities and physical accidents.

During earlier centuries infectious disease in the form of calamitous pandemics were a great regulator of populations and thus an arbiter of the forms of society. While it is true that these great plagues, such as bubonic plague, smallpox and cholera have now receded, even in the case of smallpox, disappeared, they may return. After all they came from somewhere in the first place and may do so again. Four possibilities face us:-

The first is that a brand new infectious agent may engulf us, transmitted quickly and efficiently and by a protected means. That such a possibility exists we know from painful present experience, as we are in the midst of just such a pandemic, partly hidden from the West, as Africa is bearing the main brunt of AIDS. AIDS is an awful warning to any complacency about our ability to handle any infectious disease pandemic. Africa may yet suffer a demographic slump due to AIDS of an order to compare with Europe under the scourge of the Black Death.

The second possibility is an atomic catastrophe leading to destruction of all of our present means of infectious disease control, such as sewers, vaccines and insecticides. If the present disaster camps are anything to go by, such a holocaust could lead to the re-introduction of such diseases as typhus and cholera, possibly in a new form which a dimly remembered prevention technique could not control.

The third possibility arises out of the known phenomenon of mutation. A well-known pandemic disease such as plague could revisit us in a mutant form, more swiftly transmitted, more deadly and unresponsive to our armoury of drugs and vaccines.

Finally pandemic disease could be re-awakened by the modern techniques of immunosuppression and by diseases, such as AIDS, which render the patient immuno-incompetent. It has been suggested that AIDS might bring about the re-appearance of *Yersinia* infections (plague) or rickettsial infections (typhus), so far without proof of actual occurrence.

It would be as well therefore, if the great pandemics of the past and their effects upon man and his organisations were not forgotten and allowed to slip into the limbo of ill-remembered folk-lore and ill-understood behaviour which even today lurk in our collective mythology and behaviour patterns, breaking out in odd ways and in response to inappropriate situations.

Early man, the nomad, the hunter-gatherer, was sparsely distributed. Even after the Agrarian Revolution no great population concentrations were immediately apparent. Man was not, therefore, subject to the great epidemics which require a certain level of crowding to get up and running. It was city life which provided the conditions for cholera and influenza.

Sir MacFarlane Burnet took as his text:-

"Why do not all the city-dwellers die early of infectious disease?"

The answer lies in man's ability to acquire immunity to infectious diseases. It is the main concern of man's remarkably successful immune system to rid him of foreign bodies such as the agents of disease. It should also be added that it is also a major concern of many agents of disease to circumvent man's immune system. This immune system operates with more or less success in all known infectious diseases, only in rabies and AIDS is this response so inadequate that death intervenes (1). It is the little hiccups in the system which are so important.

Ashurn wrote in 1947 :-

'Someday, perhaps, a giant of learning will weave the massive tapestry of the influence of disease on all human history'.

This is not that book. I do not possess, for instance, the necessary skills to enquire of the many primary sources and much of this enquiry uses secondary, even tertiary sources. Perhaps, however, this book might be taken as the first stumbling steps towards that book and may give encouragement to the giant of learning. It might provide some indication of the extent of the bibliography and its errors may provide some guidance among the pitfalls. The main intention of this book is to try to convince historians that omission of disease from their calculations is a major sin; that the statement that X's army was decimated by disease and so retreated is insufficient without some attempt to identify the disease and some informed calculation about its probable source and effects.

As always in a book involving geography the question of place names arises. Where the location is well-known in history I have used the name current at the time of the incident. Where it is less well-known I have used the present-day name for the locality.

INTRODUCTION

Of all the human diseases which will be considered in this book only one is thought to be as old as man – malaria. Parasites occur in the blood of chimpanzees and gorillas which are virtually indistinguishable from those causing malaria in people. It must be assumed therefore that we acquired malaria parasites from our ape ancestors at the time when our stock separated away from the higher ape stock.

All the other epidemic diseases considered here, plague, cholera, smallpox, typhus, yellow fever and influenza, are thought to be late-comers to the bodies of people and are the result of certain critical numbers of people coming together. Informed opinion has it that these great pandemic diseases (malaria is usually endemic) require a certain amount of crowding of people before they can achieve an epidemic state.

So it is usually claimed, with justice, that while man was a widely scattered hunter-gatherer he was free of the major communicable diseases other than malaria. When man became an agriculturalist and pastoralist and collected together in groups he became prey to infectious diseases.

The other general remark, which can be made at this point, is that all of these diseases were to begin with, zoonotic; that is to say they commenced as diseases of animals and were transmitted from those animals to man. Subsequently most were transmitted from man to man, losing the original animal reservoir from their life-cycle. It is generally assumed that continuing zoonoses are by nature endemic, that is only sporadically distributed and of medium to low incidence in the human population as they are transmitted to man only occasionally even if constantly. Thus yellow fever transmitted from monkeys to people will give rise to only sporadic disease in man. Yellow fever only becomes epidemic when it is transmitted man to man by local mosquitoes. Medical biology has not yet reached the state of exact laws perceived and proclaimed by man so any general statement made here is subject to exceptions and in science the exception does not prove the rule in the sense of confirming it; on the contrary it disproves the rule.

Arising out of what has just been said about zoonoses the great surprise is that pandemic plague should have been a zoonosis involving the rat as it was found to be in late nineteenth and early twentieth century pandemic. The surprise is so great that doubt should be cast on the supposition that all plague pandemics must have been bubonic plague exclusively and this question will be discussed in greater detail later.