reviews

Survey of medical history

Sydney Selwyn

Explorers of the Body. By Steven Lehrer. Pp. 463. (Doubleday: New York, 1979.) \$12.95.

POPULAR accounts of medical history are surprisingly scarce. Before the appearance of Dr Lehrer's book, the only notable example of this rare genre was *Microbe Hunters*, which was first published over 50 years ago. The author, Paul de Kruif, was a lapsed bacteriologist whose highly coloured descriptions of heroic battles against infection fired the imagination of a wide audience. Indeed, many impressionable adolescents were inspired by his book to enter medicine and related professions.

Sadly, de Kruif's sequels on nutrition, psychiatry and other medical themes were progressively — perhaps predictably — less successful; and although he can be regarded as the main originator of the racy, home-spun style of medical journalism, which remains so popular in North America, it is puzzling that so few writers have attempted to emulate him with full length work in one of the most fascinating branches of human history. Since the 1920s an intermittent series of unexciting biographies has only occasionally been relieved by something as imaginative as *Rats, Lice and History*, written by another bacteriologist, Hans Zinsser. So barren and featureless has been the landscape, that this whimsical little book of 1935 still remains outstanding.

The publication of a reasonably comprehensive survey of medical history for the general reader is therefore to be cordially welcomed. Written attractively and with authority by a practising physician, this new book builds up a mosaic of the lives and work of innumerable contributors to the development of medical science. Four central chapters out of ten are devoted to infection and its control, the remainder being idiosyncratically arranged, starting with physiology, moving to genetics and then anaesthesia. Surgery is embedded among the infections, and the book ends with X-rays and diabetes mellitus.

The opening chapter on the evolution of knowledge about the functioning of the body forms a very satisfying prelude to this vast epic. From the stumbling observations made in Ancient Greece and Rome on the action of the heart and on respiration, progress is clearly traced through the late Renaissance to the work of William Harvey and a succession of other pioneers. Many of them were not primarily interested in medicine, for example, Boyle, Hooke,

Priestley and Black in Britain, and Lavoisier and Laplace in pre-revolutionary France. As an incidental feature, the often uncomfortable (and occasionally fatal) effects of politics on the lives of medical explorers are curiously evident in this introductory section.

Similarly, in the two subsequent chapters fresh insight is provided into such well rehearsed stories as the work of Mendel, the elucidation of the structure of DNA, the acrimonious and complex background to the introduction of anaesthetic gases, and the rise and fall of mesmerism. Although inevitably told with less verve than in de Kruif's pages, Dr Lehrer's accounts of microbe hunting and taming make compelling reading. Particularly vivid are his descriptions of vaccines, antimicrobial drugs and, indeed most other medical advances.

A special feature of the book is its very revealing portraiture of major and minor participants alike. While most are necessarily depicted with the economy of a miniaturist, so extensive yet compact a gallery is unprecedented. Even the cognoscenti will probably realise for the first time just how disagreeable the average medical pioneer is. For every saintly figure such as William Withering or Paul Ehrlich, the author delineates dozens of irascible, bombastic, unscrupulous, or at the least, devious individuals such as Paracelsus, Hooke, Priestley, Erasmus Darwin, Semmelweis, Mendel, Pasteur, Koch, Cushing, Behring, Ross, and a handful of more recent Nobel laureates.

Sometimes, however, debunking seems to be indulged in for its own sake. For example, Harvey is said to have "lacked the ability of a skilled experimenter"

because he considerably underestimated the body's total blood volume (which even now is difficult to measure). Edward Jenner is also criticised on the rather tenuous grounds that he did not publish details about the death of one of his patients, who seems to have succumbed to an unrelated "infection". A further criticism is that Jenner regarded cowpox and a comparable infection of horses as being closely related both to one another and to human smallpox — which indeed is in accord with modern virological views. But after the uncritical recent apotheosis of Harvey during the celebrations of his 400th anniversary, and the sustained adulation of Jenner during the past 150 years, fair re-evaluation of their work is very welcome. The text contains relatively few typographical or factual errors, and solecisms such as the statement that the French Academy of Sciences was, in the eighteenth century, "the final authority in European medicine" are mercifully rare.

The reader may well be disappointed to find virtually no mention of pathology, pharmacology and several medical specialties, including psychiatry — the "Explorers of the Body" being zealously prevented from entering the domain of the mind. An account of some of these important subjects could well have replaced the largely non-medical section on genetics. Nevertheless, the author has accomplished a *tour de force*, and his publishers also deserve praise for producing this admirable book at so reasonable a price. □

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What world food crisis?

Nutrition and the World Food Crisis. By Mary Alice Caliendo Pp.368. (Collier-Macmillan: London, 1979.) £5.95.

ONE function of the applied scientist is to warn his fellow man of possible impending doom, but there is a very real danger of loss of credibility if "Wolf!" is cried too often. There has been a spate of books forecasting food shortage and mass starvation over the past fifty years (two hundred if one counts Malthus), but although the situation is bad it has not noticeably become worse: food production per head of population has

remained almost constant. Indeed, there has been a growing realisation that there is more than enough food about and that the real problem is that the poor cannot afford to buy their daily bread.

Food requirements are about 2,000 kilocalories per day per man, woman and child, and global agriculture produces something in excess of 4,500 kilocalories per head per day of crops suitable for human consumption. Much of this food is used inefficiently for the feeding of livestock to provide animal products for the rich, but even so there is about 2,500

kilocalories per head per day available for human consumption. So, please let us not hear about the 'World Food Crisis'.

All the evidence suggests that farmers can cope with the supply problem providing it is made worth their while. Malnutrition is not a supply problem: essentially economic demand does not equal physiological need. Very roughly half the world is underfed and the other half overfed; and it can be shown that the diseases of affluence — for example, obesity, heart disease, dental caries — are numerically of the same order as those associated with undernutrition. This poor distribution of wealth between nations is of course exacerbated by a further poor distribution within nations, which can lead to local famines. But even in the oft cited Ethiopian famine there was no shortage of food in the country as a whole: the rains failed in one area and the subsistence farmers there did not have enough money to buy food from the market in Addis Ababa.

Nevertheless, the International Agencies constantly document the wide extent of malnutrition in the world and proffer much advice on what to do about it. Not surprisingly this advice is not always consistent: experts often see things from their own narrow viewpoint, and generalists who can grasp technical, economic, social, cultural and political aspects of a problem are rare and often under-rated. Dr Caliendo has made a bold attempt to gather the relevant material, especially that since the 1974 World Food Conference. But sadly the inconsistencies have not been analysed critically or even pointed out. The need to increase food production is stressed in one chapter, but the next on distribution begins with the statement that production is about twice that needed. In chapter 2 the misplaced emphasis in the past on the role of protein in the aetiology of malnutrition is revealed, but in chapter 12 protein-rich foods are promoted. The importance of socio-economic factors is stressed in chapter 10 but their relevance to infant feeding practices in chapter 9 is not adequately discussed: bottle feeding is adopted by many intelligent mothers because it enables them to go out to work and thus improve the economic (and nutritional) status of their families. The current fashion for national food and nutrition planning is outlined but the fact that developed countries eliminated undernutrition without it is not mentioned, nor are we given one example that it has worked anywhere. Food aid is documented without definition nor mention that it is rarely food and seldom used to feed hungry people. These few examples are a true reflection of the inconsistency of the documents available, but perhaps it would be strange if such a complex problem as world hunger were to have a single simple solution.

Many modern texts are collections of papers by various authors often from

Symposia and have the disadvantage that the information is not integrated as in good old-fashioned textbooks. Dr Caliendo has sadly not grasped the opportunity to do this but tries to be all things to all men. It is difficult to see where she stands herself. The book is aimed to "provide educators and students with substantive and practical information" with a view to "make it easier to learn about the problems of global hunger and nutrition". There is no doubt that it is a most useful compendium of

information but because it is so uncritical I suspect it will confuse all but the brightest student. However, the book is cheap, extremely well illustrated with photographs, tables and graphs, and a jolly good read.

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Einstein's influence on politics and philosophy

Albert Einstein: His Influence on Physics, Philosophy and Politics. Edited by P. C. Aichelberg and R. U. Sexl. Pp. 220. (Friedr. Vieweg: Wiesbaden, Germany, 1979.) DM48.

I NEVER really liked C.P. Snow's theory of the Two Cultures. In the United States of the 1950s and 1960s it seemed to me that scientists had a good grasp of politics and that liberal arts graduates were genuinely interested in and capable of understanding the main lines of scientific development. But perhaps the only way to understand the durability of the myth of Einstein as a socially naive genius is to accept Snow's basic assertion — there exist two cultures, literary and scientific, whose members cannot talk to each other. On the science side, Einstein's physics continues to mystify the general educated public. And on the arts side Einstein's politics remain incomprehensible to scientists who invariably characterise him as being naive when they write about his life.

The present volume of essays, commissioned by the International Society on General Relativity to celebrate Einstein's centenary, misses its chance to balance the picture. Editors Aichelberg and Sexl state in their introduction that the collection demonstrates the "far reaching influence of Einstein's work and his personality on physics, philosophy, theory of science and on the politics of our time". I believe that such a demonstration is possible. But this collection fails in its attempt to present a comprehensive view of Einstein's influence because much of the physics reported will be understood only by specialists and because Einstein's politics and philosophy receive the usual banal characterisation. The editors re-express the old cliché. Einstein's philosophical directness is "naive" and "this naivete is also characteristic for Einstein's involvement towards politics in which he was increasingly involved in his later

years". The summary is wrong on both counts and it is time to do better.

Einstein was involved in politics from at least 1914 onwards and his political actions throughout his life reflected a highly sophisticated socialist's understanding of what was possible for a man in his position to do at any time. Beginning with the courageous anti-War manifesto in Berlin in 1914 which attacked the extreme national chauvinism of War-time Germany, and ending with his support for Julius and Ethel Rosenberg executed in the US for conspiracy to commit treason in the McCarthyite hysteria of the 1950s, Einstein intervened consistently against militarism, racism and fascism. And though his actions have seemed quixotic to close colleagues such as Max Born, they were informed by a detailed socialist analysis of the workings of class society.

It is possible to indicate only briefly the depth of Einstein's approach. Here is his summary of an analysis called "Why Socialism" that he wrote in 1949 for the influential US magazine, *Monthly Review*:

"The situation prevailing in an economy based on the private ownership of capital is thus characterised by two main principles: first, means of production (capital) are privately owned and the owners dispose of them as they see fit; second, the labour contract is free. Of course there is no such thing as a pure capitalist society in this sense. In particular it should be noted that the workers, through long and bitter political struggles have succeeded in securing a somewhat improved form of the 'free labour contract' for certain categories of workers. But taken as a whole, the present day economy does not differ much from 'pure' capitalism".

Einstein was clear about the solution to the problems that this social arrangement causes:

"I am convinced that there is only one way to eliminate these grave evils, namely through the establishment of a socialist economy accompanied by an educational system which would be oriented towards social goals".

These are not the views of a neophyte. Far from being naive, Einstein's radicalism contrasts favourably with the results achieved by the inept liberal nationalism of the German scientific elite. Professor Carl-Friedrich von Weizsäcker's piece on Einstein's politics illustrates the gap between the