

## Between the bedside and the laboratory

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### The Encyclopaedia of Medical Ignorance: Exploring the Frontiers of Medical Knowledge.

Edited by Ronald Duncan and Miranda Weston-Smith.

Pergamon: 1984. Pp.253. £9.95, \$17.95.

RECENTLY, I took a group of new clinical students to see a patient suffering from the severe bone pain of sickle cell anaemia. Here, surely, was encapsulated everything that two or three years rigorous training in the basic sciences had prepared them for.

The teaching session started well enough. A single base change in one of the patient's globin genes had led to the production of an abnormal haemoglobin which, in turn, had caused his red cells to change their shape. This had led to blockage of the microcirculation, death of tissue, and hence to the severe pain from which he was complaining. But then the awkward questions started. Why did his red cells sickle and produce these symptoms today; he was playing football yesterday? Why has his brother with the same disease never had any pain? How are you going to treat him and prevent a recurrence of the pain? And so on.

Much of modern medicine is like this; for a few diseases we have an inkling about what may be happening at the cellular or molecular level, or at least we can start to understand the ailment in terms of whole-organ dysfunction. But it is still difficult to translate much of this knowledge into a rational explanation for what we see at the bedside, while for many of the common degenerative or neoplastic disorders that fill the wards we have not yet even reached this stage. I suspect that it is becoming increasingly difficult for our brighter students to compromise between the empiricism of good bedside practice and the relatively thin scientific evidence on which so much of it is based; as Lewis Thomas has pointed out, practitioners of clinical science have progressed from a state of total ignorance to a position in which they are aware of their ignorance.

It follows that all textbooks of medicine are to some extent compendia of ignorance. So why another, albeit under an explicit title — we already know we are ignorant. The editors' stated aim is to highlight some major lacunae in our knowledge, and in doing so to encourage fresh thought about how to tackle important areas of clinical uncertainty. Have they succeeded? A glance through the index suggested that I would not find much that I was unaware that I was ignorant about. About half of the book is devoted to psychiatry and neurology, and most of the remaining chapters cover equally pre-

dictable subjects such as blood pressure, cancer therapy, the immunology of pregnancy, transplantation biology and the fascinating mystery of how parasites manage to survive in their hosts.

There are some highlights and surprises, however. John Edwards writes a characteristically lively account of human mutation, and Leslie Iversen and Anthony Allison give excellent reviews of the present state of our understanding of neurochemistry and immunity to viruses. Philip Gell, in a thoughtful if rather despairing essay on the complexities of the human phenotype, seems to have little faith in the ability of the tools of modern biology to tell us anything useful about behaviour or free will — this



*The Victorian way of death — Lady with the Tree Cross in Highgate Cemetery, North London. The picture is taken from Highgate Cemetery: Victorian Valhalla, a haunting celebration of the cemetery in words (by Felix Barker) and pictures (by John Gay). The book is published by John Murray, price £7.50.*

chapter should be essential reading for television producers before their next venture into the gene supermarket. The only author who would have us believe that medical ignorance is bliss is Richard Peto, who suggests that our current obsession with the mechanistic approach to cancer research is diverting our efforts (and finances) from more obvious lines of epidemiological study. Why, he asks, do we want to understand the cell biology of malignant transformation when most human cancers are due to avoidable carcinogens. Should there be a second edition, I suspect that someone will tell him.

Overall, the essays in this attractively produced collection are of a high calibre and anybody interested in the state of clinical science will find something to engage them. Where I found the book rather lacking was in some of the broader

and particularly worrying problems of modern medicine. The World Health Organization has suggested that we aim for good health for all by the end of this century. But what is good health? By changing diet, stopping smoking, controlling blood pressure and pounding the pavements at the crack of dawn, the people of Western societies may partly control the major killers of middle life. But how will we cope with our increasingly aged population? We know nothing about the biology of ageing or about what the quality of life will be for our clean-living octogenarians. And what price will they pay for their longevity? There is the prospect that we will end up with institutions full of ninety-year-olds reflecting gloomily on years of missed opportunities caused by impotence and other side effects of the drugs that controlled their mild hypertension. And there are the possible effects of our current obsession with exercise in middle life on the later incidence of degenerative joint disease. Will we all end up with a healthy myocardium but totally immobile? At the other end of the age spectrum is the question of how far we are willing to go in the application of the techniques of molecular biology to the prevention and correction of genetic disease and congenital malformation. As genetic manipulation becomes feasible will positive eugenics once more become a topic of hot debate?

Perhaps most important, who is going to pay for all this, and pay for what — do our priorities lie in trying to understand the mechanisms of degenerative arterial disease and cancer, or in prevention, or in increasingly high technology patch-up medicine for the middle aged, or in providing facilities for the massive geriatric population that is being created? And who will determine these priorities? The medical profession is happy to go on developing expensive aids to survival, and the public seem to expect them. Politicians and those who administrate our health services should take note of the recent announcement of the successful installation of an artificial heart; the doctors of those who enjoy their food and drink, and who prefer to be in bed rather than plodding through the streets at sunrise, are already reaching for their order forms.

Equally pressing are the medical problems of the developing countries, virtually ignored in the book. As Maurice King has pointed out, 600 million people will be trapped in absolute poverty by the year 2000; that is, they will be living under conditions so characterized by malnutrition, illiteracy, disease, high infant mortality and low life expectancy as to be beneath any reasonable definition of human decency. The editors of this book should take heart; there is plenty of scope for future editions. □

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