

Albert Cook of the Church Missionary Society. Subsequent growth was largely in the hands of the Colonial Administration (and later, the Ugandan Government) and Makerere University College (later Makerere University) and Medical School situated at Kampala. During the 1960s Makerere and its teaching hospital—the new Mulago—attracted scores of medical scientists of world renown; not only were standards of health care and teaching high, but a vast amount of research of international calibre was undertaken there. Of course this centre of excellence had its critics (but only an eccentric could label it a ‘white elephant’) and it was the *fons et origo* of the polarised controversy: teaching hospital *versus* primary health care in the ‘Third World’.

As Professor Raphael Owor, Dean of Medicine and Head of Pathology at Makerere University points out in the foreword to this book, it was during the period 1971–79 (the Amin years) amidst military misrule that Uganda’s social services were ‘thrown into disarray’; many members of the medical profession (including Ugandans) left or had to leave, whilst others were killed. Meanwhile ‘medical supplies became scarce’ and ‘staff morale deteriorated’. By 1981 there was a complete breakdown of medical services at all levels—subdispensaries, mission hospitals, right up to the national reference and teaching hospital.

This is a timely volume which contains essays from 37 contributors, all of whom have (or had) first-hand knowledge of Uganda’s health services. Maternal and child care receive due emphasis. The background to the crisis and subsequent breakdown of health services (at all levels) are set out in the first two sections. Then the Karamoja famine, the subsequent relief operation and the complexities of the resettlement programme are outlined, with some forward-looking on preparedness for similar disasters. The fourth (and last) section paints pictures of the current state of health services and medical education and looks to the future, taking into account lessons which have, and should have been, learned from the past and concentrating on delivery of *health* to the people of Uganda.

As Professor Owor writes, this collection of articles must not be looked upon as ‘an end in itself, but as a stimulus’. There is much thought here to catalyse those engaged in the reconstitution of health and social services in the ‘Pearl of Africa’ in the light of what has gone before.

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Drug Discovery; the Evolution of Modern Medicines, Walter Sneider. Pp. x + 435, illustrated. John Wiley, Chichester, New York, Brisbane, Toronto, Singapore, 1985. £12.95.

Many works on drug discovery start too early with reams on the Chinese, Indian, and Greek contribution in antiquity and what the Europeans and Arabs did in medieval times, but for my liking finish too early in the 20th century. *Drug Discovery: the Evolution of Modern Medicines* deals with the past 100 years. The author is a pharmacist with experience in medicinal chemistry. The work is of general interest and will appeal to those connected with the drug industry and the health services. I liked the book for it is sufficiently different from others to be a welcome addition. There is a large

amount of information gathered and a good bibliography. I suspect that the book may in part be a personal homage to those whose endeavours have introduced therapeutic agents such as those used in leukaemia which have transformed this previously universally fatal disease.

After a short introductory chapter ‘A legacy of the past’ drugs are covered in a systematic way either by their function, such as antiseptics, or by their working on a bodily system. The text is illustrated by structural formulae which enable kinships and common derivations to be appreciated. In general, the formulae are easy to follow but the non-chemist would have been helped if key positions mentioned in the text had been numbered. Topics have been made more lively and enjoyable by interesting, human snippets and anecdotes which are at times even poignant. Why is it that discoverers of antibacterial substances have their nearest and dearest saved by them? As with history books, in general, thought is given to why certain events (drug discovery) occurred, when they did, (dates), why some workers succeeded when others failed (e.g. because the technology became available as when the vacuum freeze-drying of the coffee industry helped isolate penicillin) and what, in retrospect, were the significant advances and landmarks in medicinal chemistry. For example, one of the earliest attempts at modification of natural products, the production of semi-synthetic analogues of morphine and the synthesis of local anaesthetics of novel structure, served us a model for future synthetic approaches. Clinical pharmacologists in contrast to their mathematical skills are often shaky on chemistry and it is good to be told about Crum-Brown and Fraser’s classic work on chemical structure and biological activity and the curare-like effects of quaternization.

Nowadays drug innovation is seen mainly in the ‘Western’ countries (USA, Switzerland, Germany, France, Belgium, Japan, Sweden and the UK) as making, testing, launching and monitoring novel drugs requires the resources either of the state (cancer drugs) or giant corporations with the necessary capital, know-how, teams, management, direction, market research and economic and medico-legal advice. By comparison clever patent-avoiding modifications on existing drugs may be more profitable.

There are many and varied examples of how drugs were discovered often by chance (serendipity) or design. A hot-potch of inspiration, perspiration, luck, accident, hard work, green fingers and even intrigue is involved. Disappointment may be the only reward. Drugs on testing may prove too toxic, have unforeseen problems or be too expensive to make, or the numbers who will benefit will be too few. Small and Eddy in the USA spent years of work and millions of dollars without finding the powerful, but elusive non-addictive analgesic but their contribution to scientific structure-activity relationships was invaluable. Many similar examples of the fruits and bitterness of discovery are mentioned. Time itself also makes medications obsolete to be replaced by better or more easily synthesized products.

The book begins with a backward look and I would suggest that perhaps the next edition might end with a forward look on how rational drug design is now possible and also perhaps consider some of the problems involved in discovering drugs.

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