

dependents. However, Governments should at least be faced with the fact that there are several alternative equitable and moral solutions to the cocaine problem which do not necessarily require the destruction of peasant communities in the Andes.

The layout of the book is very attractive and some of the illustrations are strikingly beautiful. Classical coloured drawings of plants from which the various drugs are derived interleave with photographs of Inca ruins and reproductions of appropriate woodcuts, paintings and master drawings such as Albrecht Dürer's *Melen-colia*. No expense appears to have been spared to reproduce in colour histological and histochemically prepared sections of the brain, clear diagrams of the relevant neural pathways in the brain and schematic illustrations of how drugs act. Included are diagrams of the structure of the various drugs, their derivatives and, where appropriate, their endogenous counterparts. There are also portrait photographs of many of the key figures such as John Cade, the Australian psychiatrist who discovered the value of lithium for the treatment of mania, and Nathan Kline who discovered that iproniazide, a monoamine oxidase inhibitor that was first used in the treatment of tuberculosis, is a potent antidepressant. Real data are used judiciously to back up the simplified explanations in the text and figures.

If *Drugs and the Brain* has any fault it is that it entrenches the view that each neurotic and psychotic symptom is due to the malfunction of one specific chemical neurotransmitter system. However, this is the age of chemical phrenology, and so in a book written for the non-specialist it is indeed very difficult to paint a picture which is clear but which at the same time is sufficiently sceptical of the notion that each mood, feeling, perception or behaviour is mediated by one specific neurotransmitter.

Solomon Snyder has produced a book which will be enjoyed by anyone with an interest in one of the most dramatic and fascinating advances in biology, the way neurons communicate to produce the properties of what we call the mind and how these communications are altered by drugs. *Drugs and the Brain* should be read and understood by politicians, civil servants and members of committees responsible for dealing with the enormous social and economic problems caused by drugs that affect the brain. The specialist too will wish to purchase the book. Not only will it look very fetching on the coffee-table now, but it could well become a collector's item in 25 years time. □

George Fink is an Honorary Professor and Director of the MRC Brain Metabolism Unit, University Department of Pharmacology, 1 George Square, Edinburgh EH8 9JZ, UK.

## How well fed is the world?

Dennis T. Avery *£32*

**People, Food, and Resources.** By Kenneth Blaxter. Cambridge University Press: 1986. Pp. 118. £15, \$29.95.

**Technology in the 1990s: Agriculture and Food.** Edited by Kenneth Blaxter and Leslie Fowden. The Royal Society: 1986. Pp. 179. Distributed by Cambridge University Press, £32.50, \$54.50.

In *People, Food, and Resources* Sir Kenneth Blaxter makes a serious, well-intentioned effort to assess the dangers of rising world population and limited food supply. He concludes that the outlook is poor because continued high population growth is certain and increased food production is not. For all the good intentions, however, both Sir Kenneth and the contributors to the Royal Society volume which he co-edited leave their readers struggling in the Club of Rome's ignorance *circa* 1974 — the report of that date predicted that famine was soon to sweep the world. The books do not reveal that in the 1980s the world's food production is expanding even faster than its fast-growing population and may still be picking up speed.

According to the statistics of the UN Food and Agriculture Organization (never known for minimizing the problem of hunger in the world) per capita food production in the developing countries gained 17 per cent in the period 1980 to 1984 alone. The developing countries raised their farm output by 38 per cent during the decade 1974–1984, and 4.1 per cent annually in the 1980s. This is a much more rapid increase than the historic 2.5 per cent per year cited by Sir Kenneth. Virtually all of the recent increase in farm output in less-developed countries came from higher yields rather than extending plantings onto fragile acres or cutting down forests. This is an astounding human achievement, one which readers will not winnow out from Sir Kenneth's determined pessimism and bias towards population management.

Sir Kenneth can be forgiven part of his sour outlook; the population growth curve has long been the least tractable element of the food–population equation. But most population experts now concede that the curve is S-shaped rather than L-shaped. As the developing nations become more affluent, their population growth will slow. Sir Kenneth says in *People, Food, and Resources* that he sees no reason to expect this to occur — but most of us know that in modern societies additional children cease to add wealth or social insurance. They become instead a

major net expense to the family.

In his most interesting chapter, Sir Kenneth offers a nice tribute to the much-maligned Reverend Malthus. Then he proceeds to follow Malthus into the trap of assuming that population will always outrun food supply — and there is now far more reason to believe in the potential fruits of agricultural research than there was in 1800.

To Sir Kenneth's credit, he apparently made a legitimate effort to find out the prospects for increasing world food production. But his specialists failed him. *Technology in the 1990s: Agriculture and Food*, the report of The Royal Society's conference on food production, lacks perspective, is highly uneven in quality and the issues concerned are obscured by over-technical language. Take this, for example: "Peptides corresponding to the antigenic site of food-and-mouth disease virus which have been synthesized either by the solid-phase method or as a part of the fusion protein have elicited neutralizing antibody and protect cattle against challenge infection . . .". The passage hardly informs the lay reader that the first, fully safe vaccine for foot-and-mouth disease has now been produced through genetic engineering.

We should not be surprised, however. Researchers have not made a good job of public liaison in the dozen years since the Club of Rome report. They should have been telling us about the powerful new techniques in plant genetics and the farming systems that are transforming agriculture in the less-developed countries, and about the potential of new lines of research. Perhaps they feared overstatement, or believed that a rush of public concern would be good for their budgets. Their lack of communication — and our resulting ignorance — has been expensive for everybody. Farmers in the affluent countries have been misled about the value of their land and the need for their produce. Consumers and taxpayers throughout the OECD countries have paid dearly to finance farm surpluses the Third World doesn't need. And few of the less-developed countries themselves have understood their farming opportunities clearly. These two books won't do much to help any of them. □

Dennis T. Avery is Senior Agricultural Analyst in the US Department of State, Washington, DC 20045, USA.

● Just published by W.W. Norton is the fourth of the *State of the World* reports from the Worldwatch Institute. Like its predecessors, the 1987 edition "examines the counterpoint of urgency and uncertainty that has come to dominate world affairs in an age when the environmental consequences of human activities transcend national boundaries"; included are chapters on, among other topics, world agriculture, nuclear power, re-cycling of waste materials and the chemical cycles. Price is hbk \$18.95, pbk \$9.95.