Preface

Reviews in this issue focus on core issues in human health and well-being, environment and biodiversity. They bring together the personal insights of distinguished scientists and their lifetime reflections on discoveries and challenges that have changed people's lives or threaten to present even greater problems in the future unless action is taken.

In 2005, two lectures discussed the question of human health. Salvador Moncada, former recipient of the Royal Medal, presented the Society's premier lecture, the Croonian lecture. His paper was concerned with the discovery and elucidation of regulators of vascular biology that many consider will lead to the conquering of many forms of vascular disease. Similarly, the remarkable advances in knowledge of micro-organisms that secrete antibiotics were discussed by Keith Chater in his Leeuwenhoek lecture, founded by a specific bequest for the field of microbiology. The story of *Streptomyces*, which evolved some 450 Myr ago, also illustrated how one group of bacteria may protect themselves from others.

Submissions from new Fellows and Members of the Society are much encouraged. Sherwood Rowland, a new Foreign Member from the USA (Nobel Prize in Chemistry 1995 with Paul Crutzen and Mario Molina), has here expanded his presentation at the annual conference for New Fellows and Members by describing pioneer studies on stratospheric ozone depletion. His stark reminder that ozone conditions of the 1950s will be only slowly restored over this century is a salutary message about the time required to reverse anthropogenic impacts on our fragile planet. Graeme Clark, a new Fellow from Australia, writes

about a lifetime of study dedicated to enabling speech perception in severely-profoundly deaf people. His work represents a landmark in establishing a sensori-neural prosthesis that links electronic technology to the central nervous system.

Further contributions from the field of reproductive biology include Roger Short's paper, in which he writes of the greatest health crisis in human history, HIV/AIDS. This author, also from Australia, tells of being forced to search for simpler and more accessible treatments of this virally induced disease, particularly in less developed countries where the link with poverty has such serious implications. 'Twink' Allen's research on the African elephant shows that while much is known of reproduction in females of this species, certain basic aspects are still not well understood, including the hormonal control of pregnancy and whether more sophisticated means could be developed to control the rate of population growth other than by culling.

The final paper in this eclectic series is a reminder that unsolicited reviews have a long history in the Society's *Philosophical Transactions*, and are always welcome. The paper, written by scientists in China and the Netherlands, reports studies of water supply in China, one of the world's fastest growing economies, and the virtual water flows that occur between the North and South.

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