



Prologue

Medicine : Then and Now

It is tempting to commemorate the most notable milestone of the Diamond Jubilee of the Association of Physicians of India by synchronising it with the significant events in the progress and practice of medicine in the last sixty years. The birth of the API coincided with the most remarkable therapeutic event of this century namely, the discovery of penicillin. Those of us who were not old enough at that time to realise its tremendous import, can only share in retrospect the excitement of the day in 1945 when the Nobel Prize (in Medicine or Physiology) was awarded to (Sir) Alexander Fleming, (Sir) Ernst Boris Chain, and (Lord) Howard Walter Florey for their "discovery of penicillin and its curative effect in various infectious diseases". The dream of eradicating infectious diseases through prevention (vaccines) and cure (antibiotics) loomed large on the horizon. Alas! It still remains to be realised as there is an ongoing race between the emergence of drug resistance in several bacteria, and the development of new antibacterials. The drug industry dominates the scene, and the major role of institutions of public health is apparently forgotten except when there is an outbreak of an infectious disease.

Be as it may, the next milestone of the Silver Jubilee of the API coincided with the award of Nobel Prize in 1969 to Max Delbruck, Alfred Hershey and Salvador Luria for their "discoveries concerning the replication mechanisms and the genetic structure of viruses". The significance of this discovery and its connection with retroviruses (HIV) is too obvious to miss! The HIV epidemic has already assumed devastating proportions with co-morbidities (TB / HIV) posing a serious threat in developing countries such as India. In spite of the major advances in the development of newer nucleoside and non- nucleoside reverse transcriptase inhibitors, protease inhibitors and fusion inhibitors, and the therapeutic potential of combination therapy, the key approach to stem the tide of world epidemic of AIDS lies in prevention through health education programmes including promotion of safe sex, barrier methods of contraception, restricting the number of partners, and avoiding sharing of needles. Attempts to develop one or more anti HIV vaccines bear promise, which however, is unlikely to materialise in the near future. Once again, innovative health policy initiatives are required but health planning continues to remain in the hands of bureaucrats or non-health professionals, with utter neglect of some far reaching recommendations enshrined in the reports of several expert committees on this subject.

The intervening years between the Silver Jubilee and the Golden Jubilee of the API in 1994 are characterized by an unprecedented resurgence of research output in life sciences including cell biology, immunology, genetics, endocrinology and metabolism. The award of the Nobel Prize

to Alfred Gileman and Martin Rodbell in 1994 for their “discovery of G-proteins and the role of these proteins in signal transduction in cells” was a reflection on the era where advances in technologies provided the bridge between life sciences and their clinical applications. Nowhere could it have been more striking than at the turn of the millennium with the epoch making publication of ‘The DNA sequence of human chromosome 22’ in the Nature (2 December, 1999). In the opening paragraph of this momentous publication, the authors (217 in number, belonging to nine institutions in the UK, USA, Canada, Japan, and Sweden) state : ‘Knowledge of the complete genomic DNA sequence of an organism allows a systematic approach to defining its genetic components. The genomic sequence provides access to the complete structures of all genes, including those without known function, their control elements, and, by inference, the proteins they encode, as well as all other biologically important sequences..... Here we report the sequence of the euchromatic part of human chromosome 22. The sequence obtained consists of 12 contiguous segments spanning 33.4 megabases, contains at least 545 genes and 134 pseudogenes, and provides the first view of the complex chromosomal landscapes that will be found in the rest of the genome.’ Characterisation of human genome, as predicted, has brought in its wake new dimensions of genomics and proteomics. Advocacy for stem cell research is gaining momentum. Indeed, these ongoing advances are likely to provide the knowledge and tools for the prevention and management of emerging epidemics of obesity, diabetes mellitus, cancer and degenerative cardiovascular disorders.

How does a practicing physician maintain a blend and balance between the understanding of scientific basis of new discoveries and their applications to clinical practice? The API and the Indian College of Physicians have been making a most remarkable contribution to the continuing professional development of practicing physicians through well designed and appropriately structured learning programmes. The present volume, Medicine Update 2005, is yet another landmark endeavour in this direction. It not only provides the scaffolding for the edifice of the scientific programme planned for the Diamond APICON, but also serves as an exhaustive compendium which the physicians will continue to refer to in the future to reinforce their knowledge and skills so critical to enhance the quality of health care.

The range and scope of subjects covered is as panoramic as the progress of medicine itself. Several contributors have not only highlighted recent development, but have also deliberated upon the contemporary dilemmas. As a result, a healthy debate is likely to be generated. The transdisciplinary nature of thrust areas in life sciences makes tight subject compartmentalization an onerous task. Furthermore, it is not easy to ensure uniform standards of all presentations in a multi-authored publication, especially when the authors vary considerably in their background and experience. While most of the chapters are delightfully rich in the scientific content, there are some pitched at the level of postgraduate residents, and a few (alas!) that are for the undergraduates only. And yet, in the perspective of such diversities, Dr. S.B. Gupta has been able to achieve a high quality output. Coming as it does three years after an equally voluminous publication (Medicine Update 2002) also edited by Dr. S.B. Gupta (the only instance in the annals of the API for such a feat, thanks to the recent change in the rules and regulations), the President-Elect, API deserves whole-hearted approbation for a task well accomplished. It is remarkable how so much can be achieved through the intense efforts, clarity of purpose, and single minded devotion of a leader, ably assisted by a dedicated team.

Tremendous growth and enormous power and reach of modern medicine has resulted in one of the major dichotomies of our times. While the scientific and technological progress has led to inflated expectations, both in the minds of the public and of the profession, yet as these expectations become unlimited, they become unachievable. Without pretending to play God, medicine will have to redefine its limits even as the physicians endeavour to extend their capacities and enlarge their competencies.

It is a matter of singular good fortune to have lived through these exciting times, more so to have enjoyed the faith and confidence of a large number of colleagues and students. It is indeed an honour to have been asked to share my thoughts with the readers at the time of the Diamond Jubilee of the API, and I do so with humility and gratitude.



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