



Editorial

Jonathan Hadgraft—A Festschrift



Professor Jonathan Hadgraft was educated at the University of Oxford where he obtained his MA and DPhil in Chemistry. Subsequently the Faculty of Medicine awarded him a DSc. He has held academic posts at the Universities of London, Strathclyde, Nottingham, Cardiff and Greenwich. During his academic career he has been involved in the supervision of over 70 PhD students. He is, or has been, a visiting professor at North West University, South Africa and Monash University, Melbourne, Australia. He has been elected to Fellowships of the Royal Society of Chemistry, The Controlled Release Society, The Association of Pharmaceutical Scientists (GB) and the American Association of Pharmaceutical Scientists. He is on the scientific advisory boards of a number of pharmaceutical companies. Over the years he has contributed to over 500 publications and serves on several editorial boards of pharmaceutical science journals. He has given numerous plenary lectures in Europe, North and South America, Japan, Africa, and Australasia. This special edition of the International Journal of Pharmaceutics is a Festschrift which honours the contribution that Jonathan has made to our understanding of the skin, and especially, to dermal and transdermal drug delivery.

Jonathan is currently Emeritus Professor of Biophysical Chemistry at the UCL School of Pharmacy, University of London, UK. His major research interests are in the application of physical chemistry to drug delivery, with special reference to the skin. His research group uses a range of biophysical techniques to probe the mechanisms of skin penetration and its modulation. This information is used to develop predictive models of skin permeation which can be used in the rational selection of actives, and excipients, for either

topical or transdermal delivery. Topical formulations are complex and more recent techniques allow the group to investigate the role of individual formulation components on the barrier properties of the skin.

As part of this editorial, Jonathan has kindly consented to give some answers which explain his perspective on pharmaceutical education and research.

Editor: Professor Hadgraft, why did you choose an academic career?

I have always wanted to be the master of my own destiny and felt that I wanted to conduct research which I could dictate. I also considered that I could contribute more to academic research which had relevance to the industry and quality of life issues whilst having roots in fundamental physical science.

Editor: Who were the most influential people in your career?

My father, Jack Hadgraft, introduced me to chemistry at a very early age; when I was about 6 or 7 I can remember experiments on a paraffin primus stove (which I still have). He showed me that lead nitrate decomposed to form the oxide with clouds of brown gas being produced. We heated sulphur to form the different allotropes and also allowed it to burn to create pungent sulphur dioxide. Favourites were to react zinc with hydrochloric acid and to burn the hydrogen produced. I also remember visiting his office at The Royal Free Hospital where he showed me how reactive metallic sodium was with water.

The other person who has influenced my research career is my tutor and DPhil supervisor John Albery, who taught me to look at data in a very fundamental way.

Editor: What are the major challenges facing those of us who are responsible for the education and development of the pharmaceutical scientists of the future?

When I started teaching pharmacy undergraduates I gave lectures on differential equations. They would not go down well with the current cohort! We have to be realistic in the ways in which education standards and expectations have changed and respond accordingly. The pharmaceutical sciences are extremely important but a sound knowledge of basic physical and biological sciences is imperative if pharmaceutical research is to progress.

Editor: Every era brings its own special interest. At the present time, the field of nanotechnology is exciting much attention. How will this impact on delivery of drugs to and through the skin?

Nanotechnology is an interesting concept and its major impact in the area of dermal and transdermal delivery is more likely to be in the technology rather than the delivery side. It may be possible to use very small analytical devices to monitor levels of drugs both within the skin and in the plasma. It is possible to foresee developments of the GlucoWatch and to miniaturize the devices and make them more sensitive to a range of analytes.

Editor: How has UK Pharma changed in your lifetime?

There are far fewer major companies and in some ways, I think that this has made the 'large industry' far less innovative. Contrasting with this, there are far more small companies, particularly spin-outs from universities where there is still considerable innovation.

Editor: How can UK PLC compete with the lower cost bases which we see in other countries?

This is difficult to answer as the cost base is largely dictated by local man power costs. In terms of research far more could be achieved with academic groups. But universities have to be realistic

in costing of studies that are predominantly industry funded. More could be achieved by reasonable profit sharing from patented ideas.

Editor: Finally, is there any truth in the rumour that you have retired?

Yes, and no. I still help the research group and hope that my mind is active enough to contribute new ideas and novel ways of data interpretation. I do not miss the increased bureaucracy that is now rife in the university sector which was not the case when I first started my academic career.

Guest Editor

Majella E. Lane*

*Senior Lecturer, UCL School of Pharmacy, 29-39
Brunswick Square, London, WC1N 1AX,
United Kingdom*

*Tel.: +44 207 7535821; fax: +44 870 1659275.

E-mail address: majella.lane@btinternet.com

Available online 15 June 2012