**‘A Little Light Relief’**
**Professor David Phillips**
**Emeritus professor of chemistry, Imperial College, London**

Professor Phillips is noted globally for his researches on photochemistry and for his insightful public speaking about many scientific issues, honed in the nineteen-eighties during his tenure of the Wolfson Chair of Natural Philosophy at the Royal Institution, which maintained the tradition set by Humphrey Davey and Michael Faraday of holding Friday evening discourses, Christmas lectures etc. to keep the public informed about developments in science. Since his RI days Professor Phillips has been a senior professor at Imperial College. From July 2010 to July 2012, he served as President of the Royal Society of Chemistry, in which role he led a national campaign to illustrate the benefits chemistry has brought to modern life. So the Cirencester Science and Technology Society’s programme for 2012-2013 was brought to a rather special climax by his authoritative, informative and amusing lecture on June 12th, a joint event with the Royal Society of Chemistry and the Society for Chemical Industry.

Professor Phillips’s lecture illustrated and explained many of the ways in which modern medicine benefits from the science of photo-chemistry. Life on earth evolved under the mainly beneficial influence of the radiation from the sun that penetrates our atmosphere (or once did). Scientists are learning how to exploit more fully specific regions of that radiation, notably the visible spectrum and adjacent infrared and ultraviolet regions, in the detection and treatment of diseases. Professor Phillips outlined the pros and cons of the effects of light on the skin, and diagnostic and therapeutic uses of light. Among therapeutic uses he discussed were treatments of skin complaints such as psoriasis and neonatal jaundice, and also the photo-inactivation of viral, bacterial and fungal infections that can be achieved, illustrated by striking photographs showing the remarkable recoveries patients have made without needing surgical intervention. The use of lasers has revolutionized other aspects of medicine, as illustrated by laser surgery using infrared or ultraviolet lasers and photodynamic therapy, which entails the use of lasers together with chemical sensitizers to destroy tumours selectively.

Throughout, Professor Phillips kept his audience fascinated by his stories and demonstration experiments, for example including illustrations of fluorescence under ultraviolet light, where compounds emit radiation of a lower wavelength than that they are absorbing, or luminescence, where energy from chemical reactions is lost by the emission of light rather than heat. He used a torch to set a globe spinning, and showed how an unwired neon tube lit up as if by magic in an electromagnetic field. Thanks to these and other visual aids he certainly didn’t have to resort to exploding the second bottle of hydrogen and oxygen he had brought lest anyone nodded off, though to the audience’s delight he did explode it using a catalyst to facilitate initiation. His talk covered many themes, provoked a variety of interesting questions, and left his audience mulling over the large number of new facts they had learnt, so ably summarized by Professor Ray Baker in his appropriately warm vote of thanks.

*Given on Wednesday 12th June 2013 at the Royal Agricultural University*